STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

PERMIT

Permittee: Connecticut Department of Transportation
2800 Berlin Turnpike
P.O. Box 317546
Newington, CT 06131-7546

Attn: Edgar T. Hurle
Director of Environmental Planning

Permit No: IW-200701713
Permit Type: Inland Wetlands and Watercourses
Town: New Haven/West Haven
DOT Project: 95-522

Pursuant to Connecticut General Statutes Section 22a-39 the Commissioner of Environmental Protection hereby grants a permit to the Connecticut Department of Transportation (the "permittee") to conduct activities within inland wetlands and watercourses in the City of West Haven and New Haven in accordance with its application and plans which are part thereof filed with this Department on June 22, 2007 signed by Edgar T. Hurle and dated June 19, 2007 (the "plans"). The purpose of said activities is to reconstruct I-95 over the West River in the City of New Haven and West Haven (the "site").

AUTHORIZED ACTIVITY

Specifically, the permittee is authorized to alter 0.04 acres of inland wetlands or watercourses for the reconstruction of I-95 in accordance with said application and plans entitled "Reconstruction of I-95 over West River, New Haven/West Haven," dated December 19, 2008 revised April 2, 2009.

This authorization constitutes the permits and approvals required by Section 22a-39 of the Connecticut General Statutes and is subject to and does not derogate any present or future property rights or other rights or powers of the State of Connecticut, conveys no property rights in real estate or material nor any exclusive privileges, and is further subject to any and all public and private rights and to any federal, state, or local laws or regulations pertinent to the property or activity affected hereby.

PERMITTEE'S FAILURE TO COMPLY WITH THE TERMS AND CONDITIONS OF THIS PERMIT SHALL SUBJECT PERMITTEE AND PERMITTEE'S CONTRACTOR(S) TO ENFORCEMENT ACTIONS AND PENALTIES AS PROVIDED BY LAW.

This authorization is subject to the following conditions:

SPECIAL CONDITIONS

None

GENERAL CONDITIONS

1. **Initiation and Completion of Work.** At least five (5) days prior to starting any construction activity at the site, the permittee shall notify the Commissioner of Environmental Protection (the "Commissioner"), in writing, as to the date activity will start, and no later than five (5) days after completing such activity, notify the Commissioner, in writing, that the activity has been completed.

2. **Expiration of Permit.** If the activities authorized herein are not completed by five years after the date of this permit, said activity shall cease and, if not previously revoked, this permit shall be null and void.

   Any application to renew or reissue this permit shall be filed in accordance with Sections 22a-6j and 22a-39 of the General Statutes and Section 22a-3a-5(c) of the regulations of Connecticut State Agencies. In order to be considered timely, any such application must be filed at least 120 days prior to the expiration date of this permit.

3. **Compliance with Permit.** All work and all activities authorized herein conducted by the permittee at the site shall be consistent with the terms and conditions of this

permit. Any regulated activities carried out at the site, including but not limited to, construction of any structure, excavation, fill, obstruction, or encroachment, that are not specifically identified and authorized herein shall constitute a violation of this permit and may result in its modification, suspension, or revocation. In constructing or maintaining the activities authorized herein, the permittee shall not store, deposit or place equipment or material including without limitation, fill, construction materials, or debris in any wetland or watercourse on or off site unless specifically authorized by this permit. Upon initiation of the activities authorized herein, the permittee thereby accepts and agrees to comply with the terms and conditions of this permit.

4. **Transfer of Permit.** This authorization is not transferable without the written consent of the Commissioner.

5. **Reliance on Application.** In evaluating the permittee's application, the Commissioner has relied on information provided by the permittee. If such information subsequently proves to be false, deceptive, incomplete or inaccurate, this permit may be modified, suspended or revoked.

6. **Best Management Practices.** In constructing or maintaining the activities authorized herein, the permittee shall employ best management practices, consistent with the terms and conditions of this permit, to control storm water discharges and erosion and sedimentation and to prevent pollution. Such practices to be implemented by the permittee at the site include, but are not necessarily limited to:

   a. Prohibiting dumping of any quantity of oil, chemicals or other deleterious material on the ground;

   b. Immediately informing the Commissioner's Oil and Chemical Spill Section at 424-3338 of any adverse impact or hazard to the environment, including any discharges, spillage or loss of oil or petroleum or

chemical liquids or solids, which occurs or is likely to occur as the direct or indirect result of the activities authorized herein;

c. Separating staging areas at the site from the regulated areas by silt fences or haybales at all times.

d. Prohibiting storage of any fuel and refueling of equipment within 25 feet from any wetland or watercourse.

e. Preventing pollution of wetlands and watercourses in accordance with the document "Connecticut Guidelines for Soil Erosion and Sediment Control" as revised. Said controls shall be inspected by the permittee for deficiencies at least once per week and immediately after each rainfall and at least daily during prolonged rainfall. The permittee shall correct any such deficiencies within forty eight (48) hours of said deficiencies being found.

f. Stabilizing disturbed soils in a timely fashion to minimize erosion. If a grading operation at the site will be suspended for a period of thirty (30) or more consecutive days, the permittee shall, within the first seven (7) days of that suspension period, accomplish seeding and mulching or take such other appropriate measures to stabilize the soil involved in such grading operation. Within seven (7) days after establishing final grade in any grading operation at the site the permittee shall seed and mulch the soil involved in such grading operation or take such other appropriate measures to stabilize such soil until seeding and mulching can be accomplished.

g. Prohibiting the storage of any materials at the site which are buoyant, hazardous, flammable, explosive, soluble, expansive, radioactive, or which could in the event of a flood be injurious to human, animal or plant life, below the elevation of the five-hundred (500) year flood. Any other material or equipment stored at the site below said elevation by the

permittee or the permittee's contractor must be firmly anchored, restrained or enclosed to prevent flotation. The quantity of fuel stored below such elevation for equipment used at the site shall not exceed the quantity of fuel that is expected to be used by such equipment in one day.

h. Immediately informing the Commissioner's Inland Water Resources Division (IWRD) of the occurrence of pollution or other environmental damage resulting from construction or maintenance of the authorized activity or any construction associated therewith in violation of this permit. The permittee shall, no later than 48 hours after the permittee learns of a violation of this permit, report same in writing to the Commissioner. Such report shall contain the following information:

(i) the provision(s) of this permit that has been violated;

(ii) the date and time the violation(s) was first observed and by whom;

(iii) the cause of the violation(s), if known

(iv) if the violation(s) has ceased, the duration of the violation(s) and the exact date(s) and times(s) it was corrected;

(v) if the violation(s) has not ceased, the anticipated date when it will be corrected;

(vi) steps taken and steps planned to prevent a reoccurrence of the violation(s) and the date(s) such steps were implemented or will be implemented;

(vii) the signatures of the permittee and of the individual(s) responsible for actually preparing such report, each of whom shall certify said report in accordance with section 9 of this permit.

For information and technical assistance, contact the Department of Environmental Protection's Inland Water Resources Division at (860)424-3019.

7. **Contractor Liability.** The permittee shall give a copy of this permit to the contractor(s) who will be carrying out the activities authorized herein prior to the start of construction and shall receive a written receipt for such copy, signed and dated by such contractor(s). The permittee's contractor(s) shall conduct all operations at the site in full compliance with this permit and, to the extent provided by law, may be held liable for any violation of the terms and conditions of this permit.

8. **Monitoring and Reports to the Commissioner.** The permittee shall record all actions taken pursuant to Condition Number 6(e) of this permit and shall, on a monthly basis, submit a report of such actions to the Commissioner. This report shall indicate compliance or noncompliance with this permit for all aspects of the project which is the subject of this permit. The report shall be signed by the environmental inspector assigned to the site by the permittee and shall be certified in accordance with Condition Number 9 below. Such monthly report shall be submitted to the Commissioner no later than the 15th of the month subsequent to the month being reported. The permittee shall submit such reports until the subject project is completed.

9. **Certification of Documents.** Any document, including but not limited to any notice, which is required to be submitted to the Commissioner under this permit shall be signed by the permittee, a responsible corporate officer of the permittee, a general partner of the permittee, or a duly authorized representative of the permittee and by the individual or individuals responsible for actually preparing such document, each of whom shall certify in writing as follows:

"I have personally examined and am familiar with the information submitted in this document and all

attachments and certify that based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief, and I understand that any false statement made in this document or its attachments may be punishable as a criminal offense in accordance with Section 22a-6 under Section 53a-157b of the Connecticut General Statutes."

10. **Submission of Documents.** The date of submission to the Commissioner of any document required by this permit shall be the date such document is received by the Commissioner. Except as otherwise specified in this permit, the word "day" as used in this permit means the calendar day. Any document or action which falls on a Saturday, Sunday, or legal holiday shall be submitted or performed by the next business day thereafter.

Any document or notice required to be submitted to the Commissioner under this permit shall, unless otherwise specified in writing by the Commissioner, be directed to:

The Director
DEP/Inland Water Resources Division
79 Elm Street, 3rd Floor
Hartford, Connecticut, 06106-5127

Issued by the Commissioner of Environmental Protection on:

_____
Date

_____
Amey Marrella
Acting Commissioner

DRAFT PERMIT

Permit No: 200701714-KZ

Municipalities: New Haven/West Haven

Work Area: West River off property located at the Interstate 95 West River Bridge, Bridge #00163A

Permittee: CT DOT
Edgar Hurle
P.O. Box 3175436
Newington, CT 06131-7546

Pursuant to sections 22a-359 through 22a-363f of the Connecticut General Statutes ("CGS"), CGS sections 22a-28 through 22a-35, section 401 of the Federal Clean Water Act, as amended, and in accordance with CGS section 22a-98 and the Connecticut Water Quality Standards dated December 2002, a permit is hereby granted by the Commissioner of Environmental Protection ("Commissioner") to replace and expand the I-95 West River bridge, modify and upgrade existing stormwater drainage systems, remove the existing Kimberly Avenue off ramp, and conduct tidal wetlands mitigation for public transportation purposes as is more specifically described below in the SCOPE OF AUTHORIZATION, in the West River off property identified as the "work area" above.

*****NOTICE TO PERMITTEES AND CONTRACTORS*****

FAILURE TO CONFORM TO THE TERMS AND CONDITIONS OF THIS PERMIT MAY SUBJECT THE PERMITTEE AND ANY CONTRACTOR TO ENFORCEMENT ACTIONS, INCLUDING PENALTIES AND INJUNCTIONS, AS PROVIDED BY LAW.

SCOPE OF AUTHORIZATION

The Permittee is hereby authorized to conduct the following work as described in application #200701714-KZ, including 65 sheets of plans dated submitted by the Permittee to the Commissioner and attached hereto as follows: Figure 1. dated January 2009, Figures 2, 3, 5, 6, 7, 18, through 50 dated June 2008, Figures 1E, 2E, 3E, 4E, 1G and 2G dated January 2009, 5 sheets identified as "Attachment M", 2 sheets identified as "Attachment N", 3 sheets identified as "Attachment F", 4 sheets identified as "Attachment C2", 2 sheets identified as "Attachment G8", and 3 sheets identified as "Attachment G10" as follows:

1. replace in its entirety the existing I-95 West River Bridge with a new bridge supporting a composite concrete deck slab located within the footprint and directly south of the existing bridge as shown on Figure 33 within an area waterward of the high tide line as follows:

A. temporary install two 10 m wide steel trestles set at a minimum of 0.3 meters above the 25 year frequency flood of 2.54 meters located on both sides of the existing bridge with associated access ramps including the use of 263 610mm diameter pipe piles as shown on Figures 37 through 39 of the plans attached hereto;

B. temporarily install off the southern side of the western trestle described in paragraph 1.A., above, a dock consisting of a 3 meter wide x 12 meter long access ramp leading to two 7.5 meter wide x 15 meter long floating docks held in place by six 18" diameter steel pipe piles as shown on Figure 39 of the plans attached hereto;

C. temporarily stage two supply barges measuring approximately 5 meters wide x 20 meters long and two construction barges measuring approximately 5 meters wide x 20 meters long within the confines of the West River, and one temporary barge mooring area located along the northern side of the western bridge approach held in place by two mooring clusters as shown on Figure 37 of the plans attached hereto;

D. remove the existing West River Bridge which is approximately 348 meters long x 28 meters wide and replace such bridge with a new concrete bridge superstructure that is 348 meters long x 43.2 meter wide composed of a continuous welded 6 span steel plate girder system, which will carry a 100-mm fiberglass IMS conduit, a 100-mm fiberglass conduit for CCTV, two 65-mm conduits for highway illumination circuits, a future IMS cable, a 150-mm ductile iron (dry) fire protection pipe system, and a 50-mm rigid metal conduit for the navigation light circuits;

E. remove existing concrete piers E2 through E7 requiring the installation of temporary sheet pile enclosures located over and adjacent to the West River as follows:

i. remove existing Pier E2 to an elevation of no less than one meter below the existing substrate as shown on Figure 31 of the plans attached hereto as follows:

a. install a temporary sheet pile enclosure measuring approximately 90.3 meters long around the perimeter of the existing pier;
b. excavate a total of approximately 304 cubic meters of substrate below the high tide line from within the temporary sheet pile enclosure described in paragraph 1.E.i.a, above;
c. remove approximately 136.4 cubic meters of existing concrete pier material over 51.9 square feet within the confines of the temporary sheet pile enclosure;
d. upon removal of the concrete pier, backfill the temporary sheet pile enclosure described in paragraph 1.E.i.a above, with a total of approximately 304 cubic meters of material as required pursuant to SPECIAL TERMS AND CONDITIONS paragraph 7., below, to the elevation of the proposed finished grade; and

ii. remove existing Pier E3 to an elevation no less than one meter below existing substrates shown on Figure 31 of the plans attached hereto as follows:

a. install a temporary sheet pile enclosure measuring approximately 90.3 meters long around the perimeter of the existing pier;
b. excavate a total of approximately 304 cubic meters of substrate below the high tide line from within the temporary sheet pile enclosure described in paragraph 1.E.ii.a, above;
c. remove approximately 136.4 cubic meters of existing concrete pier material over 51.9 square feet within the confines of the temporary sheet pile enclosure; and
d. upon removal of the concrete pier, backfill the temporary sheet pile enclosure described in paragraph 1.E.ii.a above, with a total of approximately 304 cubic meters of material as required pursuant to SPECIAL TERMS AND CONDITIONS paragraph 7., below, to the elevation of the surrounding substrate; and

iii. remove existing Pier E4 to an elevation no less than one meter below existing substrates shown on Figure 32 of the plans attached hereto as follows:

a. install a temporary sheet pile enclosure measuring approximately 93.1 meters long around the perimeter of the existing pier;
b. excavate a total of approximately 562 cubic meters of substrate below the high tide line from within the temporary sheet pile enclosure described in paragraph 1.E.iii.a, above;
c. remove approximately 170.5 cubic meters of existing concrete pier material over 64.8 square feet within the confines of the temporary sheet pile enclosure; and
d. upon removal of the concrete pier, backfill the temporary sheet pile enclosure described in paragraph 1.E.iii.a above, with a total of approximately 562 cubic meters of soil material as required pursuant to SPECIAL TERMS AND CONDITIONS paragraph 8., below, to the elevation of the surrounding substrate; and

iv. remove existing Pier E5 to an elevation of no less than one meter below existing substrate as shown on Figure 32 of the plans attached hereto as follows:

a. install a temporary sheet pile enclosure measuring approximately 93.1 meters long around the perimeter of the existing pier;
b. excavate a total of approximately 562 cubic meters of substrate below the high tide line from within the temporary sheet pile enclosure described in paragraph 1.E.iv.a, above;
c. remove approximately 170.5 cubic meters of existing concrete pier material over 64.8 square feet within the confines of the temporary sheet pile enclosure; and
d. upon removal of the concrete pier, backfill the temporary sheet pile enclosure described in paragraph 1.E.iv.a above, with a total of approximately 562 cubic meters of material as required pursuant to SPECIAL TERMS AND CONDITIONS paragraph 8., below, to the elevation of the surrounding substrate; and

v. remove existing Pier E6 to an elevation of no less than one meter below existing grade as shown on Figure 32 of the plans attached hereto as follows:

a. install a temporary sheet pile enclosure measuring approximately 90.3 meters long around the perimeter of the existing pier;

b. excavate a total of approximately 304 cubic meters of substrate below the high tide line from within the temporary sheet pile enclosure described in paragraph 1.E.v.a, above;
c. remove approximately 136.4 cubic meters of existing concrete pier material over 51.9 square feet within the confines of the temporary sheet pile enclosure; and
d. upon removal of the concrete pier, backfill the temporary sheet pile enclosure described in paragraph 1.E.v.a above, with a total of approximately 304 cubic meters of material as required pursuant to SPECIAL TERMS AND CONDITIONS paragraph 7., below, to the elevation of the surrounding substrate; and

vi. remove existing Pier E7 to an elevation of no less than one meter below existing grade as shown on Figure 31 of the plans attached hereto as follows:

a. install a temporary sheet pile enclosure measuring approximately 90.3 meters long around the perimeter of the existing pier;
b. excavate a total of approximately 304 cubic meters of substrate below the high tide line from within the temporary sheet pile enclosure described in paragraph 1.E.v.a, above;
c. remove approximately 136.4 cubic meters of existing concrete pier material over 51.9 square feet within the confines of the temporary sheet pile enclosure; and
d. upon removal of the concrete pier, backfill the temporary sheet pile enclosure described in paragraph 1.E.v.a above, with a total of approximately 304 cubic meters of material as required pursuant to SPECIAL TERMS AND CONDITIONS paragraph 7., below, to the elevation of the surrounding substrate; and

F. install proposed bridge Piers P1 through P4 over the West River requiring the use of cofferdams as shown on Figures 34 through 36 as follows:

i. install Pier P1 as shown on Figure No. 34 of the plans attached hereto as follows:

a. temporarily install an approximately 104 meter long conventional cofferdam to enclose the proposed pier described in paragraph 1.F.i.d., below;
b. excavate approximately 880 cubic meters of material from within the confines of the steel enclosure described in paragraph 1.F.i.a., above, to install the concrete pier described in paragraph 1.F.i.d., below;
c. install 406 mm pre-stressed concrete piles and associated granular fill material within the confines of the excavated area described in paragraph 1.F.i.b., above;
d. place approximately 313 cubic meters of concrete fill material within the confines of the excavated area described paragraph 1.F.i.b., above, to form the pier; and
e. restore surrounding areas adjacent to the authorized pier to pre-work conditions by placing approximately 880 cubic yards of material consisting of 165 cubic meters of granular fill and approximately 402 cubic meters of clean soil backfill material within the confines of the excavated area described in paragraph 1.F.i.b., above, to the elevation of the surrounding substrate and as required pursuant to SPECIAL TERMS AND CONDITIONS paragraphs 7., below;

ii. install Pier P2 as shown on Figure No. 35 of the plans attached hereto as follows:

a. temporarily install an approximately 112.2 meter long conventional cofferdam to enclose the proposed pier described in paragraph 1.F.ii.d., below;
b. excavate approximately 2,416 cubic meters of material from within the confines of the steel enclosure described in paragraph 1.F.ii.a., above, to install the concrete pier described in paragraph 1.G.ii.d., below;
c. install 406 mm pre-stressed concrete piles and associated granular fill material within the confines of the excavated area described in paragraph 1.F.i.b., above;
d. place approximately 605 cubic meters of concrete fill material within the confines of the excavated area described paragraph 1.F.ii.b., above, to form the pier; and
e. restore surrounding areas adjacent to the authorized pier to pre-work conditions by placing approximately 1,811 cubic meters of material consisting of 254 cubic meters of granular fill and approximately 1,557 cubic meters of clean soil backfill material within the confines of the excavated area described in paragraph 1.F.ii.b., above, to the elevation of the surrounding substrate and as required pursuant to SPECIAL TERMS AND CONDITIONS paragraph 8., below; and

iii. install Pier P3 as shown on Figure No. 35 of the plans attached hereto as follows:

a. temporarily install an approximately 115.2 meter long conventional cofferdam to confine the proposed pier described in paragraph 1.F.iii.d., below;
b. excavate approximately 2,493 cubic meters of material from within the confines of the cofferdam described in paragraph 1.F.iii.a., above, to install the concrete pier described in paragraph 1.F.iii.d., below;
c. install 406 mm pre-stressed concrete piles and associated granular fill material within the confines of the excavated area described in paragraph 1.F.iii.b., above;
d. place approximately 629 cubic meters of concrete fill material within the confines of the excavated area described paragraph 1.F.iii.b., above, to form the pier; and
e. restore surrounding areas adjacent to the authorized pier to pre-work conditions by placing approximately 1,864 cubic meters of material consisting of 262 cubic meters of granular fill and approximately 1,602 cubic meters of clean soil backfill material within the confines of the excavated area described in paragraph 1.F.iii.b., above, to the elevation of the surrounding substrate and as required pursuant to SPECIAL TERMS AND CONDITIONS paragraph 8., below; and

iv. install Pier P4 as shown on Figure No. 36 of the plans attached hereto as follows:

a. temporarily install an approximately 109.8 meter long conventional cofferdam to confine the proposed pier described in paragraph 1.F.iv.c., below around the existing pier;
b. excavate approximately 1,056 cubic meters of material from within the confines of the steel enclosure described in paragraph 1.F.iv.a., above, to install the concrete pier described in paragraph 1.F.iv.c., below;
c. install 406 mm pre-stressed concrete piles and associated granular fill material within the confines of the excavated area described in paragraph 1.F.i.b., above;
d. place approximately 363 cubic meters of concrete fill material within the confines of the excavated area described paragraph 1.F.iv.b., above, to form the pier; and
d. restore surrounding areas adjacent to the authorized pier to pre-work conditions by placing approximately 693 cubic meters of material consisting of 172 cubic meters of granular fill and approximately 521 cubic meters of clean soil backfill material within the confines of the excavated area described in paragraph 1.F.iv.b., above, to the elevation of the surrounding substrate and as required pursuant to SPECIAL TERMS AND CONDITIONS paragraph 7., below; and

G. remove in its entirety the existing Kimberly Avenue exit ramp including approximately 1,755 square meters of existing off ramp superstructure located north along the eastern bridge approach requiring the temporary installation of a steel trestle as follows:

i. temporarily install a 10 meter wide x 142 meter long steel pile support trestle consisting of sixty six 610 mm diameter steel pipe piles located along the easterly side of the existing Kimberly Avenue exit ramp as shown on Figure 37 of the plans attached hereto;

ii. remove existing Piers E12 through E14 to an elevation no less than one meter below existing substrate as shown on Figure 29 of the plans attached hereto as follows:

a. temporarily install an approximately 53.4 meter long sheet pile enclosure to confine the proposed pier described in paragraph 1.G.iv.c., below;
b. excavate approximately 159 cubic meters of material from within the confines of the steel enclosure described in paragraph 1.G.iv.a., above, to remove the existing pier;
c. remove approximately 16 cubic meters of concrete pier material within the confines of the excavated area described paragraph 1.G.iv.b., above; and
d. backfill with approximately 159 cubic meters of clean soil material within the confines of the entire sheet pile enclosure described in paragraph 1.G.iv.b, above, to the elevation of the surrounding substrate and as required pursuant to SPECIAL TERMS AND CONDITIONS paragraph 7., below; and

iii. remove existing Piers E15 through E21 to an elevation no less than one meter below existing substrate as shown on Figure No. 30 of the plans attached hereto as follows:

a. temporarily install an approximately 53.4 meter long sheet pile enclosure to confine the proposed pier described in paragraph 1.G.iv.c., below,
b. excavate approximately 159.5 cubic meters of material from within the confines of the sheet pile enclosure described in paragraph 1.G.iv.a., above, to remove the existing pier;
c. remove approximately 13.2 cubic meters of concrete pier material within the confines of the excavated area described paragraph 1.G.iv.b., above, and
d. backfill with approximately 159.5 cubic meters of clean soil material within the entire confines of the sheet pile enclosure described in paragraph 1.I.i.a., above, to the elevation of the surrounding substrate and as required pursuant to SPECIAL TERMS AND CONDITIONS paragraph 7., below; and

H. install a stormwater outfall pipe located off Ella T. Grasso BLVD as shown on Figures 18 and 19 of the plans attached hereto as follows:

i. excavate approximately 26.6 cubic meters of existing tidal wetland soils to the elevation of approximately 1.0' NAVD at the site;

ii. install an approximately 3.9 meter wide x 4.8 meter long riprap splash pad consisting of 0.3 meter modified riprap and 0.15 meter granular fill within the excavated area landward of the tidal wetland limit;

iii. install an approximately 9.8 meter long x 2.3 meter high masonry endwall immediately landward of the riprap splash pad described in paragraph 1.H.ii., above, and

iv. install a 2.45 meter long x 600 mm wide RCP upstream of the masonry endwall described in paragraph 1.H.iii., above;

I. modify an existing stormwater outfall pipe located off the Ella T. Grasso BLVD as shown on Figures 20 and 21 of the plans attached hereto, as follows:

i. excavate approximately 46.9 cubic meters of existing tidal wetland soils to remove the outfall pipe and endwall described in paragraph 1.I.ii., below;

ii. remove approximately 3 square meters of existing concrete endwall and approximately 4 linear meters of an existing 750 mm diameter RCP located landward of the excavated area described in paragraph 1.I.i., above;

iii. remove an approximately 30 square meter area of existing riprap located waterward of the existing pipe terminus and plug the existing 750 mm diameter RCP with a pipe plug;

iv. grade the site to a slope of approximately 4 horizontal : 1 vertical including backfilling the excavated area utilized to remove the existing endwall and RCP to create a natural swale using a natural or manmade planting substrate ("soil") in accordance with SPECIAL TERMS AND CONDITIONS paragraph 7, below; and

v. install a temporary biodegradable matting atop the graded area to minimize soil erosion and promote plant growth; and

J. reconstruct an existing outfall pipe located off the Ella T. Grasso BLVD as shown on Figures 22 through 24 of the plans attached hereto as follows:

i. temporarily install approximately 30 linear meters of steel sheet piling to encase the proposed riprap scour hole described in paragraph 1.J,v., below;

ii. excavate approximately 313.6 cubic meters of tidal wetland soils over an approximately 140 square meter area to install a new 37 meter long x 1,350 mm wide x 1,040 mm high aluminum pipe arch within the excavated area;

ii. backfill the aluminum pipe arch with approximately 386.54 cubic meters of a natural or manmade planting substrate ("soil") to the elevation of the previous grade and in accordance with SPECIAL TERMS AND CONDITIONS paragraph 7., below;

iv. excavate approximately 12 cubic yards of tidal wetlands soil to remove an approximately 2.0 square meters of existing endwall and install 6.0 square meters of new concrete endwall at the terminus of the new aluminum pipe arch described in paragraph 1.J.ii., above,

v. excavate approximately 60 cubic yards of tidal wetlands soils to install approximately 0.15 meters of granular fill and 0.3 meters of modified riprap to form a 6.1 m wide x 7.3 m long riprap scour pad at the terminus of the headwall described in paragraph 1.J., above; and

vi. install a temporary biodegradable matting atop the graded area to minimize soil erosion and promote plant growth; and

K. install a new stormwater outfall discharge pipe within an existing retaining wall located south of I-95 as shown on Figures 25 and 26 as follows:

i. remove and reconstruct approximately 2 linear meters of existing masonry retaining wall;

ii. install a new 900 mm aluminum outfall pipe at invert elevation -0.096 NAVD within the confines of the reconstructed retaining wall described in paragraph 1.K.i., above; and

iii. remove approximately 7.23 cubic meters of intertidal sediments waterward of the 900mm outfall pipe terminus; and

2. conduct tidal wetland restoration along the north side of the proposed West River Bridge authorized herein between the existing Compost Access Road and the West River as shown on Figures 4 and 1E of the plans attached hereto as follows:

A. excavate approximately 8,500 cubic meters of existing soil material over 5,174 square meters to approximately elevation 0.82 meters NAVD for the lower marsh section (2,697 square meters) and 1.50 meters NAVD for the upper marsh section (2,477 square meters) as shown on Figure 2G of the plans attached hereto;

B. place an approximately 0.3 meter layer of planting substrate/topsoil atop of the newly graded area described in paragraph 2.A., above, with a substrate/topsoil mixture described in SPECIAL TERMS AND CONDITIONS paragraph 7 below; and

C. plant the entire excavated area described in paragraph 2.A., above with tidal wetland plants at approximately 600 mm and 900 mm on center within the designated areas as shown on the Planting Schedule on Figure 1G of the plans attached hereto; and

3. temporarily remove and reinstall upon completion of the project, approximately 239 square meters (2,572) square feet of floating docks including 15 supported by piles owned by City Point Yacht Club located under and adjacent to the proposed I-95 West River Bridge as identified on Figure 33 of the plans attached hereto.

UPON INITIATION OF ANY WORK AUTHORIZED HEREIN, THE PERMITTEE ACCEPTS AND AGREES TO COMPLY WITH ALL TERMS AND CONDITIONS OF THIS PERMIT.

SPECIAL TERMS AND CONDITIONS

1. Except as specifically authorized by this permit, no equipment, material or debris shall be deposited, placed or stored in any tidal wetland or watercourse, nor shall any tidal wetland or watercourse be used as a staging area or accessway other than as provided herein.

2. Prior to the demolition of the existing bridge authorized herein, the Permittee shall submit for the review and written approval of the Commissioner a temporary protective barrier system plan ("Debris Containment Plan") for the existing bridge to contain debris. The plan shall include the type, size, location, and scheduled maintenance plan of the barriers, and shall assess any navigational conflicts.

3. Not later than thirty (30) days prior to the mooring of barges authorized herein, the Permittee shall submit for the Commissioner's review and written approval a Barge Location Plan for construction and dewatering barges.

4. Prior to the commencement of work on-site, the Permittee shall install and maintain in optimal operating condition a sediment control system ("SCS") along all shoreline areas to prevent sediments from migrating into the West River during the work authorized herein. The SCS shall be installed within the approximate areas identified on Figures 18, 20, 22, and 25 of the plans attached hereto and in accordance with Connecticut Guidelines for Soil Erosion and Sediment Control, DEP-Bulletin 34. The SCS shall be silt fence for all areas

designated landward of the high tide line and shall be a turbidity boom anchored into the shore for all areas designated waterward of the high tide line. The Permittee shall maintain the SCS in optimal operating condition until the work is completed and the site has stabilized.

5. All work authorized in SCOPE OF AUTHORIZATION paragraphs 1.H. through 1.K. and 2. shall be conducted during periods of low water.

6. The Permittee shall conduct water quality monitoring for elevated turbidity levels from June 1st through September 30th, inclusive, of any year while conducting work to remove existing bridge piers or to install new bridge piers authorized in the SCOPE OF AUTHORIZATION paragraphs 1.E. and 1.F., above, to protect spawning shellfish. Such water monitoring shall include taking sample readings hourly no more than 50 feet upstream and downstream of either bridge pier demolition or installation work. If at any time during such activity water readings are increased by more than 5 n.t.u. over ambient, the Permittee shall immediately cease all work and modify work conditions to reduce on-site turbidity levels. The Permittee shall not recommence work until water readings have resumed to a level that is not more than 5 n.t.u. over ambient.

7. The Permittee shall temporarily install and maintain in optimal operating condition a floating turbidity boom around the cofferdams and steel sheet pile enclosures authorized herein while work is being conducted or while turbid sediments are being maintained with the cofferdams.

8. The Permittee shall backfill the surrounding areas of proposed piers P1 and P4, demolished piers E2, E3, E6, E7 and E12 through E21 including the existing off ramp abutment, and the tidal wetland restoration area as described in the SCOPE OF AUTHORIZATION paragraphs 1.F.i. and 1.F.iv, 1.E.i, 1.E.ii, 1.E.v, 1.E.vi, 1.G.ii, and 1.Giii, and 2., respectively with a minimum a 0.3 meter deep layer of natural or manmade planting substrate or topsoil ("soil") containing no less than 75% sand by weight and with an organic content no less than 10% and no more than 15% as required in Attachment F of the plans attached hereto.

9. The Permittee shall backfill proposed piers P2 and P3 and existing demolished piers E4 and E5, as described in the SCOPE OF AUTHORIZATION paragraphs 1.F.iii. and 1.F.iv, and 1.E.iii and 1.E.iv, respectively with a 0.3 meter layer of structural soil ("soil") as required in Attachment F of the plans attached hereto.

10. The Permittee shall maintain a minimum of a 15 meter wide navigable channel under the existing and proposed West River Bridge at all times unless otherwise authorized by the Commissioner in writing.

11. The Permittee shall not conduct any pile driving or driving of sheet pile with impact hammers for more than twelve hours per day from April 1st through June 30th, inclusive, of any year in order to protect the upstream migration of anadromous fish for the installation of the temporary trestles located waterward of mean high water, proposed piers P2 and P3, and

for the removal of existing piers E3 through E6 authorized herein. Such work is prohibited during any two consecutive 12-hour periods during which pile driving or driving of sheet pile with impact hammers occurs during a 24-hour period.

12. Prior to the demolition of the existing bridge authorized in the SCOPE OF AUTHORIZATION paragraph 1.D., above, the Permittee shall submit within thirty (30) days prior to the commencement of demolition activities, a Demolition Plan for the Commissioner's review and written approval. Such Demolition Plan must contain a description of the proposed methods for removal of the existing piers, including: the equipment that will be utilized; a discussion of how potential adverse environmental impacts to fisheries resources will be eliminated or minimized; and a timetable for implementation and completion. The Permittee shall conduct all demolition activities in accordance with the plan approved in writing by the Commissioner. If the Permittee elects to utilize blasting to remove the existing piers, then the following conditions shall apply:

A. blasting activities are prohibited between April 1st and June 30th, inclusive, of any year in order to protect anadromous fish during the spawning period. The Commissioner may consider a written request from the Permittee to modify the closure period. Such request must detail how impacts to anadromous fish will be minimized;

B. during the blasting activities authorized herein, the Permittee shall conduct an underwater blasting monitoring study. The purpose of the study will be to measure underwater pressure waves, assess fish affected by the blasts and evaluate the effectiveness of mitigation measures. The Permittee shall retain one or more qualified consultants acceptable to the Commissioner to prepare the documents and implement or oversee such study. Not later than one hundred eighty (180) days prior to planned commencement of blasting, the Permittee shall submit for the Commissioner's review and written approval a scope of study that has been prepared in consultation with DEP Inland Fisheries Division staff. The results of such study must be submitted for the Commissioner's review and written approval no later than six (6) months following the completion of blasting associated activities authorized herein; and

C. the Permittee shall notify the DEP-Fisheries Division in writing a minimum of two (2) weeks before blasting is proposed to commence. Such notification shall include a contact person and the dates, times, and locations of proposed blasting;

If the Permittee chooses to utilize hoe ramming to remove the existing piers, then the following conditions shall apply:

D hoe ramming is prohibited between April 1st and June 30th, inclusive, of any year in order to protect anadromous fish during the spawning period. The Commissioner may consider a written request from the Permittee to modify the closure period. Such request must describe how impact to anadromous fish will be minimized. In particular, the request shall describe the hoe rams that are proposed to be employed and evaluate, either

by field study or literature review, the underwater sound levels such hoe rams may produce relative to levels that are harmful to fish;

E. if the applicant demonstrates that the hoe rams to be employed are unlikely to produce harmful sound levels, then hoe ramming may be allowed during the period April 1st and June 30th, inclusive, but only during a period of 12 consecutive hours during any 24 hour period. There are to be no two consecutive 12 hour periods of hoe ramming;

F. the Commissioner may consider a written request from the Permittee to modify the 12 hour closure period. Such request must include the results of a field study or literature study that demonstrates the underwater acoustics produced by the proposed hoe rams will not interfere with the migration of anadromous fish; and

G. if the Commissioner approves hoe ramming activities between April 1st and June 30th, the Permittee may be required to conduct an underwater acoustic monitoring study. The purpose of the study will be to measure and characterize the underwater acoustics generated by the hoe rams and to evaluate, based on existing literature, such acoustics relative to levels that may be harmful to fish or deter fish migration. The Permittee shall retain one or more qualified consultants acceptable to the Commissioner to prepare the documents and implement or oversee such study. The study shall be developed in consultation with the DEP Inland Fisheries Division staff. Not later than one hundred eighty (180) days prior to planned commencement of hoe ramming, the Permittee shall submit for the Commissioner's review and written approval a scope of study for implementing such monitoring study. The results of such study must be submitted for the Commissioner's review and written approval no later than six (6) months following the completion of hoe ramming associated activities authorized herein.

13. The Permittee shall complete the tidal wetland mitigation work described in the SCOPE OF AUTHORIZATION paragraph 2., above, prior to the completion of the construction of the bridge.

14. The Permittee shall conduct the tidal wetlands mitigation work described in the SCOPE OF AUTHORIZATION paragraph 2., above, in accordance with Item #0948013A-Tidal Wetland Creation, identified as "Attachment C2," Item #0950202A-Shoreline Grass Establishment, identified as "Attachment G8," and Item #0949029A- Furnishing, Planting and Mulching Trees, Shrubs, Vines and Ground Cover Plants, identified as "Attachment G10" of the plans attached hereto.

15. The Permittee shall use only plant source material that is native to Long Island Sound to plant tidal wetland vegetation associated with the tidal wetland mitigation areas described in the SCOPE OF AUTHORIZATION paragraph 2., above. Prior to the initiation of work to complete these activities, the Permittee shall provide to the Commissioner the name and address of the company where the plant source material utilized to complete this work will be secured.

16. The Permittee shall conduct on-site monitoring of the Tidal Wetland Mitigation Area authorized in the SCOPE OF AUTHORIZATION paragraph 2., above, for a period no less than 3 years. Monitoring shall be undertaken in accordance with the Monitoring Plan identified as Attachment M of the plans attached hereto. In addition, the Permittee shall conduct a post-construction assessment following the fifth growing season after completion of the mitigation site(s) construction or by the end of the monitoring period, whichever is later in accordance with Attachment N of the plans attached hereto. During the monitoring process, the Permittee shall immediately implement any remedial recommendations that may be prescribed by the Commissioner in writing. If the Commissioner determines following the 3 year monitoring program that the approved restoration plan has not been successful, the Permittee shall submit for review and written approval of the Commissioner a revised plan to achieve restoration at this site.

17. Prior to the completion of the work authorized herein, the Permittee shall install and maintain in optimal operating condition three hydrodynamic separators, one just prior to the terminus of the authorized outfall pipe (TW-1) as shown on Figure 18 of the plans attached hereto; one located prior to the proposed outfall pipe Ella Grasso BLVD (TW-3) identified as Figure 22, and one located off the I-95 Corridor prior to the authorized outfall pipe (TW-4) as shown on Figures 25 and 43 of the plans attached hereto. The hydrodynamic separators shall be obtained from an approved vendor on the DOT approved products list. In addition, during the first year of operation of the hydrodynamic separators, the Permittee shall submit for review and written approval of the Commissioner quarterly inspection reports that document site observations, necessary modifications or repairs, and the volume of sediment removed.

18. Upon completion of the I-95 West River bridge replacement project authorized herein, the Permittee or the City Point Yacht Club may reinstall the floating docks described in the SCOPE OF AUTHORIZATION paragraph 3., above, to the previous permitted location identified in permit #TWSD-SL-90-171.

19. The Permittee shall obtain all necessary permits from the DEP Bureau of Materials Management & Compliance Assurance Permitting and Enforcement Division for all water discharges into the West River in accordance with sections 22a-430 and 22a-430(b) of the Connecticut General Statutes.

20. All temporary trestles authorized herein shall be removed within six (6) months from the completion of the bridge construction and demolition work. Removal shall consist of either pulling the piles out entirely or cutting them off at the mudline. Removal of the trestles shall be conducted in the reverse order of the installation process, to eliminate the staging of construction equipment within regulated areas.

21. Any area disturbed by the work authorized herein including areas affected by the placement of temporary fill, shall be restored to their pre-work conditions including reestablishing all original contours and revegetating with suitable vegetation as required in SPECIAL TERMS AND CONDTIONS paragraph 14., above.

22. The Permittee shall not store equipment, construction materials, or clean or repair any machinery within 8 meters of a tidal wetland or tidal watercourse.

23. A complete copy of this permit, including its drawings, special conditions, and any amendments, shall be maintained at the work site whenever work is being performed. The Permittee shall assure that all contractors, subcontractors and other personnel performing the authorized work are aware of and understand all permit terms and conditions.

24. Dragging the bottom with a spoil barge, scow, vessel, beam or similar equipment outside of the area authorized by this permit to be dredged or excavated is prohibited.

25. Side casting or in-water rehandling of excavated material is prohibited. Scows or barges shall be loaded and navigated in a manner that prevents spillage and washout of dredged or excavated material. Any incidents shall be immediately reported to the Commissioner.

GENERAL TERMS AND CONDITIONS

1. All work authorized by this permit shall be completed within ten years from date of issuance of this permit ("work completion date") in accordance with all conditions of this permit and any other applicable law.

   a. The Permittee may request a two-year extension of the work completion date. Such request shall be in writing and shall be submitted to the Commissioner at least 30 days prior to said work completion date. Such request shall describe the work done to date, work which still needs to be completed and the reason for such extension. The Commissioner shall grant or deny such request in her sole discretion.

   b. Any work authorized herein conducted after said work completion date or any authorized one year extension thereof is a violation of this permit and may subject the Permittee to enforcement action, including penalties, as provided by law.

2. Not later than two weeks prior to the commencement of any work authorized herein, the Permittee shall submit to the Commissioner, on the form attached hereto as Appendix A, the name(s) and address(es) of any contractor(s) employed to conduct such work and the expected date for commencement and completion of such work.

3. On or before (a) 90 days after completion of the work authorized herein, or (b) upon expiration of the work completion date or any authorized one year extension thereof, whichever is earlier, the Permittee shall submit to the Commissioner "as built" plans prepared by a licensed engineer, licensed surveyor or licensed architect, as applicable, of the work area showing all contours, bathymetries, tidal datums and structures.

4. In conducting the work authorized herein, the Permittee shall not deviate from the attached plans, as may be modified by this permit. The Permittee shall not make de minimis changes from said plans without prior written approval of the Commissioner.

5. The Permittee shall maintain all structures or other work authorized herein in good condition. Any such maintenance shall be conducted in accordance with applicable law including, but not limited to, CGS sections 22a-28 through 22a-35 and CGS sections 22a-359 through 22a-363f.

6. Prior to the commencement of any work authorized hereunder, the Permittee shall cause a copy of this permit to be given to any contractor(s) employed to conduct such work. At the work area the Permittee shall, whenever work is being performed, make available for inspection a copy of this permit and the final plans for the work authorized herein.

7. The Permittee shall notify the Commissioner in writing of the commencement of any work and completion of all work authorized herein no later than three days prior to the commencement of such work and no later than seven days after the completion of such work.

8. The Permittee shall dispose of aquatic sediments in accordance with the terms and conditions of this permit. All waste material generated by the performance of the work authorized herein shall be disposed of by the Permittee at an upland site approved for the disposal of such waste material, as applicable.

9. In undertaking the work authorized hereunder, the Permittee shall not cause or allow pollution of wetlands or watercourses, including pollution resulting from sedimentation and erosion. For purposes of this permit, "pollution" means "pollution" as that term is defined by CGS section 22a-423.

10. Upon completion of any work authorized herein, the Permittee shall stabilize all areas impacted by construction, or used as a staging area or accessway in connection with such work.

11. Any document required to be submitted to the Commissioner under this permit or any contact required to be made with the Commissioner shall, unless otherwise specified in writing by the Commissioner, be directed to:

    Permit Section
    Office of Long Island Sound Programs
    Department of Environmental Protection
    79 Elm Street
    Hartford, Connecticut 06106-5127
    (860) 424-3034
    Fax # (860) 424-4054

12. The date of submission to the Commissioner of any document required by this permit shall be the date such document is received by the Commissioner. The date of any notice by the Commissioner under this permit, including but not limited to notice of approval or disapproval of

any document or other action, shall be the date such notice is personally delivered or the date three days after it is mailed by the Commissioner, whichever is earlier. Except as otherwise specified in this permit, the word "day" as used in this permit means calendar day. Any document or action which is required by this permit to be submitted or performed by a date which falls on a Saturday, Sunday or a Connecticut or federal holiday shall be submitted or performed on or before the next day which is not a Saturday, Sunday, or a Connecticut or federal holiday.

13. The work specified in the SCOPE OF AUTHORIZATION is authorized solely for the purpose set out in this permit. No change in the purpose or use of the authorization work or facilities as set forth in this permit may occur without the prior written authorization of the Commissioner. The Permittee shall, prior to undertaking or allowing any change in use or purpose from that which is authorized by this permit, request authorization from the Commissioner for such change. Said request shall be in writing and shall describe the proposed change and the reason for the change.

14. This permit may be revoked, suspended, or modified in accordance with applicable law.

15. This permit is not transferable without prior written authorization of the Commissioner. A request to transfer a permit shall be submitted in writing and shall describe the proposed transfer and the reason for such transfer. The Permittee's obligations under this permit shall not be affected by the passage of title to the work area to any other person or municipality until such time as a transfer is authorized by the Commissioner.

16. The Permittee shall allow any representative of the Commissioner to inspect the work authorized herein at reasonable times to ensure that it is being or has been accomplished in accordance with the terms and conditions of this permit.

17. In granting this permit, the Commissioner has relied on representations of the Permittee, including information and data provided in support of the Permittee's application. Neither the Permittee's representations nor the issuance of this permit shall constitute an assurance by the Commissioner as to the structural integrity, the engineering feasibility or the efficacy of such design.

18. In the event that the Permittee becomes aware that he did not or may not comply, or did not or may not comply on time, with any provision of this permit or of any document required hereunder, the Permittee shall immediately notify the Commissioner and shall take all reasonable steps to ensure that any noncompliance or delay is avoided or, if unavoidable, is minimized to the greatest extent possible. In so notifying the Commissioner, the Permittee shall state in writing the reasons for the noncompliance or delay and propose, for the review and written approval of the Commissioner, dates by which compliance will be achieved, and the Permittee shall comply with any dates which may be approved in writing by the Commissioner. Notification by the Permittee shall not excuse noncompliance or delay and the Commissioner's approval of any compliance dates proposed shall not excuse noncompliance or delay unless specifically stated by the Commissioner in writing.

19. In evaluating the application for this permit the Commissioner has relied on information and data provided by the Permittee and on the Permittee's representations concerning site conditions, design specifications and the proposed work authorized herein, including but not limited to representations concerning the commercial, public or private nature of the work or structures authorized herein, the water-dependency of said work or structures, its availability for access by the general public, and the ownership of regulated structures or filled areas. If such information proves to be false, deceptive, incomplete or inaccurate, this permit may be modified, suspended or revoked, and any unauthorized activities may be subject to enforcement action.

20. The Permittee may not conduct work waterward of the high tide line or in tidal wetlands at this permit site other than the work authorized herein, unless otherwise authorized by the Commissioner pursuant to CGS section 22a-359 et. seq. and/or CGS section 22a-32 et. seq.

21. The issuance of this permit does not relieve the Permittee of his obligations to obtain any other approvals required by applicable federal, state and local law.

22. Any document, including but not limited to any notice, which is required to be submitted to the Commissioner under this permit shall be signed by the Permittee and by the individual or individuals responsible for actually preparing such document, each of whom shall certify in writing as follows: "I have personally examined and am familiar with the information submitted in this document and all attachments and certify that based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief, and I understand that any false statement made in this document or its attachments may be punishable as a criminal offense."

23. This permit is subject to and does not derogate any present or future property rights or powers of the State of Connecticut, and conveys no property rights in real estate or material nor any exclusive privileges, and is further subject to any and all public and private rights and to any federal, state or local laws or regulations pertinent to the property or activity affected hereby.

Issued on _____, 2009

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

_____

Amey W. Marella
Acting Commissioner

Permit Application No. 200701714-KZ

OFFICE OF LONG ISLAND SOUND PROGRAMS

APPENDIX A

TO: **Permit Section**
Department of Environmental Protection
Office of Long Island Sound Programs
79 Elm Street
Hartford, CT 06106-5127

PERMITTEE: CT DOT
Edgar Hurle
P.O. Box 316546
Newington, CT 06131-7546

Permit No: 200701714-KZ, New Haven/West Haven

CONTRACTOR 1: _____

Address: _____

_____

Telephone #: _____

CONTRACTOR 2: _____

Address: _____

_____

Telephone #: _____

CONTRACTOR 3: _____

Address: _____

_____

Telephone #: _____

EXPECTED DATE OF COMMENCEMENT OF WORK: _____

EXPECTED DATE OF COMPLETION OF WORK: _____

PERMITTEE: _____
(signature) (date)

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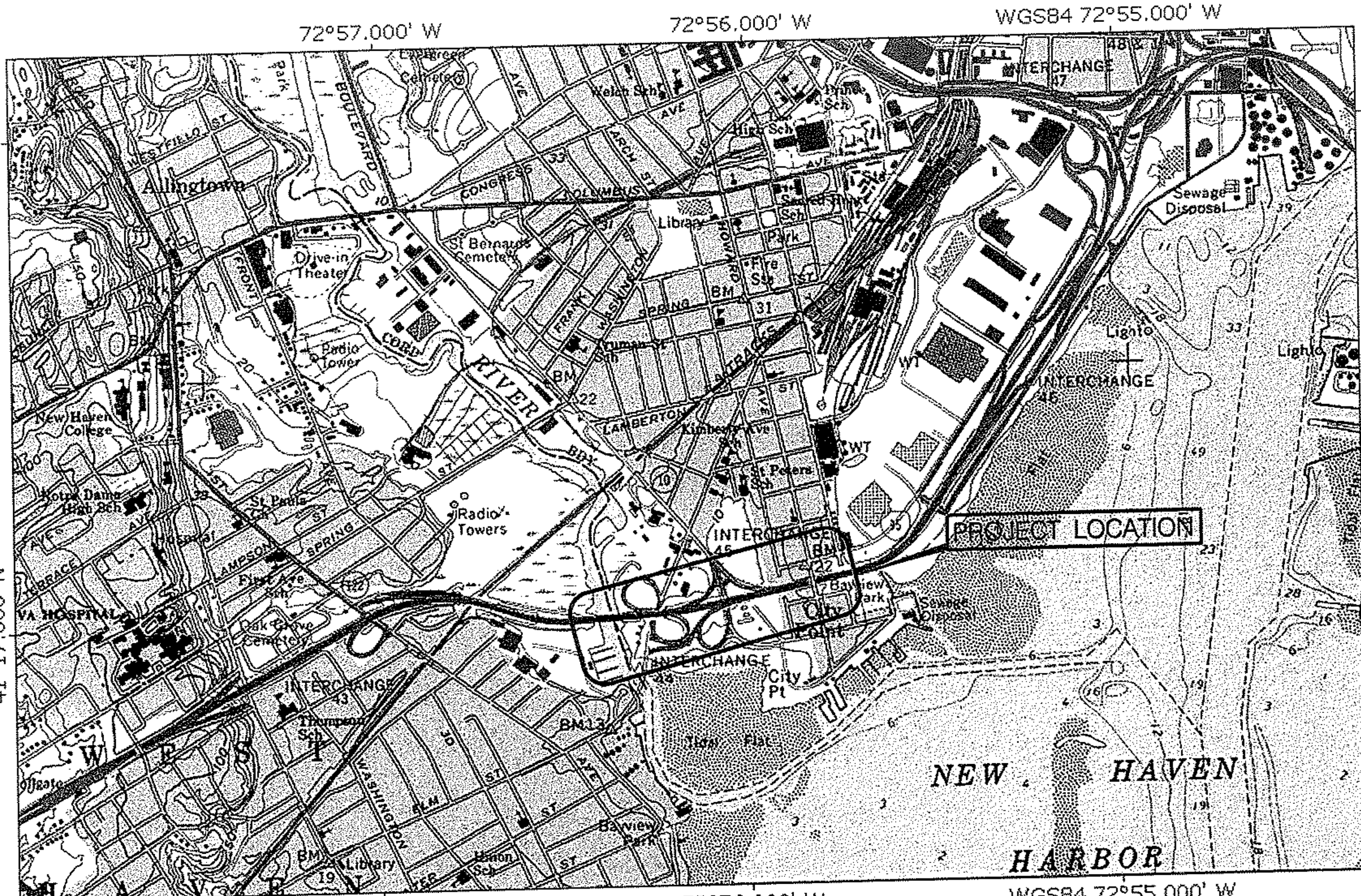

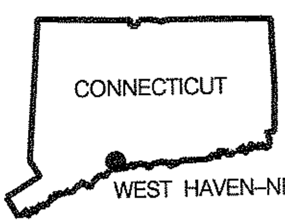

REFERENCE: NEW HAVEN QUADRANGLE MAP #95, 1985

SCALE IN FEET

0 1000 2000 3000 4000 5000

SCALE 1:24000

STATE OF CONNECTICUT - DEPARTMENT OF TRANSPORTATION

STATE PROJECT NO. 92-522

RECONSTRUCTION OF I-95 OVER WEST RIVER
NEW HAVEN–WEST HAVEN

FIG. NO. 1	VICINITY MAP	1/09

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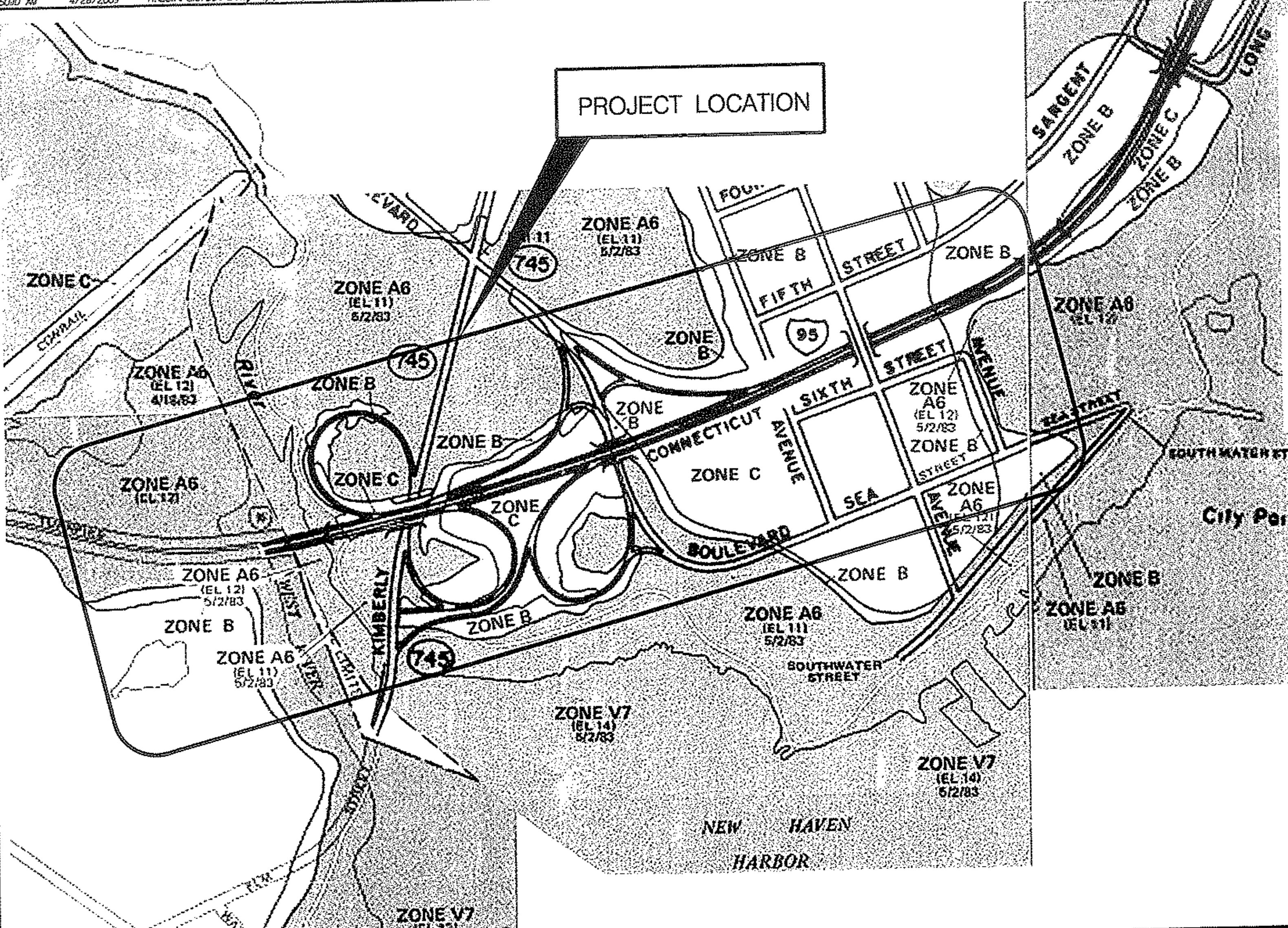

KEY TO MAP

500-Year Flood Boundary	ZONE B
100-Year Flood Boundary	
Zone Designations*	ZONE A1 / ZONE A6
100-Year Flood Boundary	
500-Year Flood Boundary	ZONE B
Base Flood Elevation Line With Elevation In Feet**	513
Base Flood Elevation in Feet Where Uniform Within Zone**	(EL 987)
Elevation Reference Mark	RM7×
Zone D Boundary	
River Mile	•M1.5

UNDEVELOPED COASTAL BARRIERS†

Identified 1983 | Identified 1990 | Otherwise Protected Areas

†Coastal barrier areas are normally located within or adjacent to special flood hazard areas.

**Referenced to the National Geodetic Vertical Datum of 1929

*EXPLANATION OF ZONE DESIGNATIONS

ZONE	EXPLANATION
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
AO	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined.
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
A99	Areas of 100-year flood to be protected by flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood. (Medium shading)
C	Areas of minimal flooding. (No shading)
D	Areas of undetermined, but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.

To determine if flood insurance is available in this community, contact your insurance agent, or call the National Flood Insurance Program, at (800) 638-6620.

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STATE OF CONNECTICUT - DEPARTMENT OF TRANSPORTATION

STATE PROJECT NO. 92-522

RECONSTRUCTION OF I-95 OVER WEST RIVER
NEW HAVEN-WEST HAVEN

FIG. NO. 2	FEMA FLOODPLAIN MAP	6/08

AREA OF IMPACT TO FLOODPLAIN	
	AREA ft² (m²) [acres]
MAIN LINE	7,136 (663) [0.1638]
ELLA GRASSO BOULEVARD	118,177 (10,979) [2.71]
RAMP A	11,711 (1,088) [0.2688]
RAMP B	1,862 (173) [0.0427]
RAMP C	6,770 (629) [0.1554]
RAMP D	12,120 (1,126) [0.2782]
KIMBERLY AVENUE	51,301 (4,766) [1.177]
SEA STREET	31,398 (2,917) [0.7208]
COMMUTER PARKING LOT	44,154 (4,102) [1.0136]
IW–1	108 (10) [0.0025]
IW–2	64 (6) [0.0015]
IW–3	54 (5) [0.0012]
IW–4	129 (12) [0.0030]
IW–5	1,334 (124) [0.0306]
TW–1	915 (85) [0.0210]
TW–2	338 (31.4) [0.0078]
TW–3	6878 (638) [0.1577]
TW–4	490 (45.5) [0.0112]
TW–5	1,356 (126) [0.0311]
TW–6	1,281 (119) [0.0294]
TOTAL	299,536 (27,828) [6.88]

VOLUME OF CUT / FILL IN FLOODPLAIN		
	CUT yd³ (m³)	FILL yd³ (m³)
MAIN LINE	650 (497)	556 (425)
ELLA GRASSO BOULEVARD	6,950 (5,314)	5,381 (4,114)
RAMP A	233 (178)	837 (640)
RAMP B	65 (50)	60 (46)
RAMP C	8 (6)	324 (248)
RAMP D	196 (150)	1,295 (990)
KIMBERLY AVENUE	1,985 (1,518)	2,365 (1,808)
SEA STREET	1,159 (886)	1,316 (1,006)
COMMUTER PARKING LOT	386 (295)	970 (742)
IW–1	21 (16)	16 (12)
IW–2	1.8 (1.4)	1.8 (1.4)
IW–3	2.4 (1.8)	2.4 (1.8)
IW–4	123 (94)	7 (5)
IW–5	0	188 (144)
TW–1	34.7 (26.6)	0 (0)
TW–2	61.4 (46.9)	61.4 (46.9)
TW–3	410.2 (313.6)	505.6 (386.5)
TW–4	9.5 (7.2)	0 (0)
TW–5	2,190.5 (1,674.7)	2,190.5 (1,674.7)
TW–6	4,737.3 (3,621.9)	4,737.3 (3,621.9)
TOTAL	19,223.8 (14,698.1)	20,814.0 (15,913.2)
	NET CHANGE =	1590.2 (1215.1) FILL

STATE OF CONNECTICUT - DEPARTMENT OF TRANSPORTATION

STATE PROJECT NO. 92–522

RECONSTRUCTION OF I–95 OVER WEST RIVER
NEW HAVEN–WEST HAVEN

FIG. NO.		
3	SUMMARY OF 100 YEAR FLOODPLAIN IMPACTS	6/08

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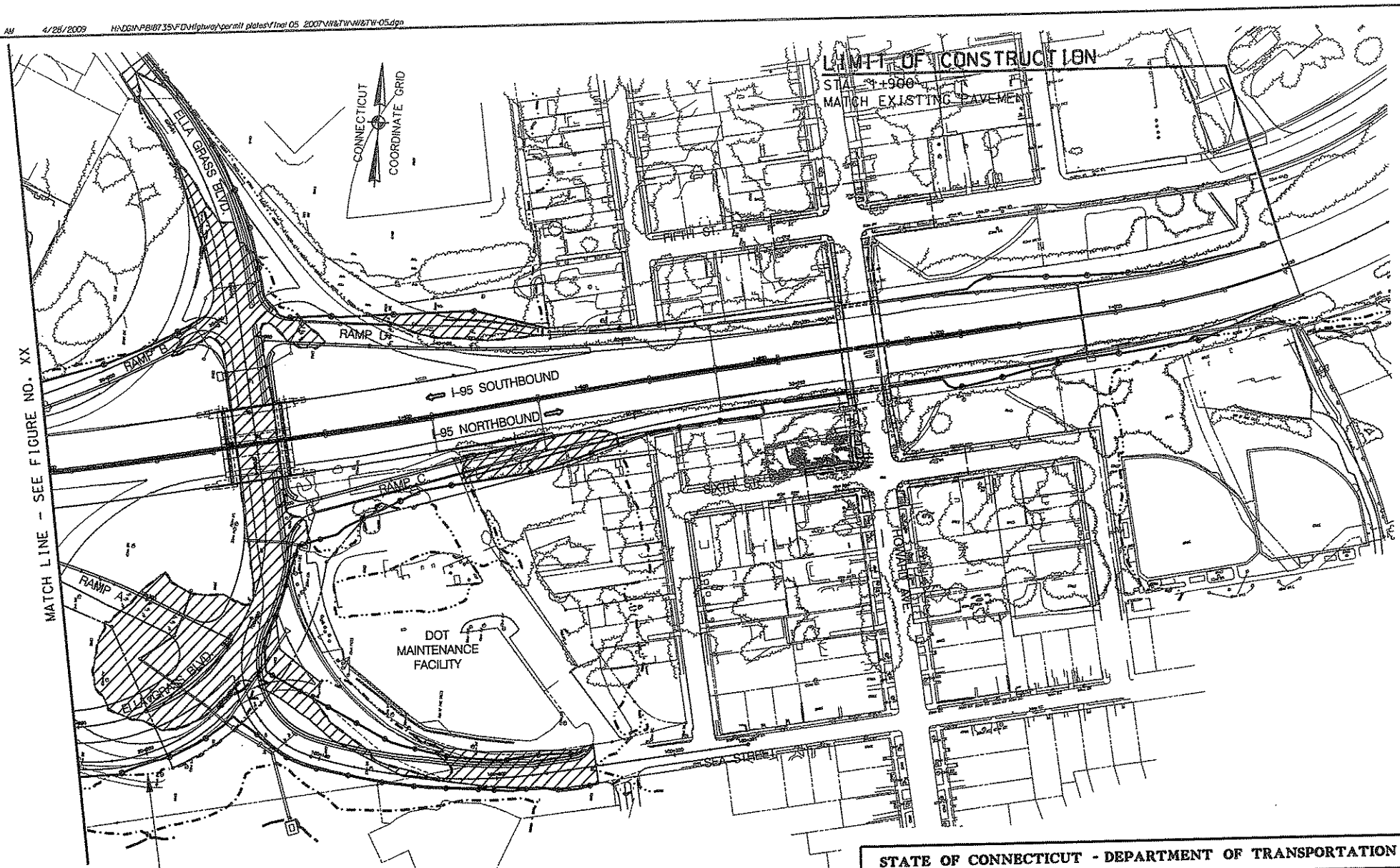

STATE OF CONNECTICUT - DEPARTMENT OF TRANSPORTATION		
STATE PROJECT NO. 92-522		
RECONSTRUCTION OF I-95 OVER WEST RIVER NEW HAVEN-WEST HAVEN		
FIG. NO. 5	FLOODPLAIN IMPACT AREA MAP	6/08

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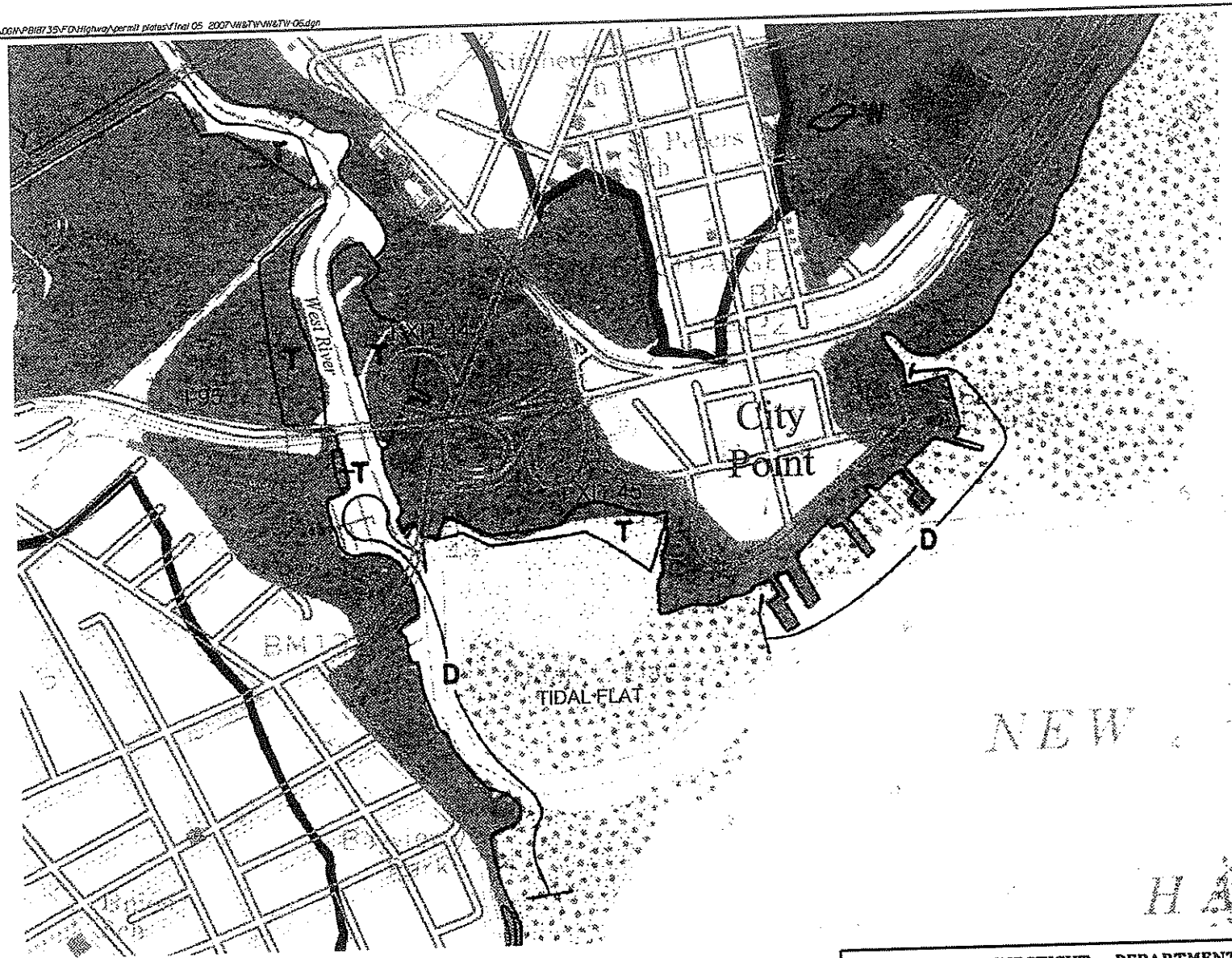

STATE OF CONNECTICUT - DEPARTMENT OF TRANSPORTATION		
STATE PROJECT NO. 92-522		
RECONSTRUCTION OF I-95 OVER WEST RIVER NEW HAVEN-WEST HAVEN		
FIG. NO. 6	COASTAL RESOURCES MAP (CTDEP 1979)	6/08

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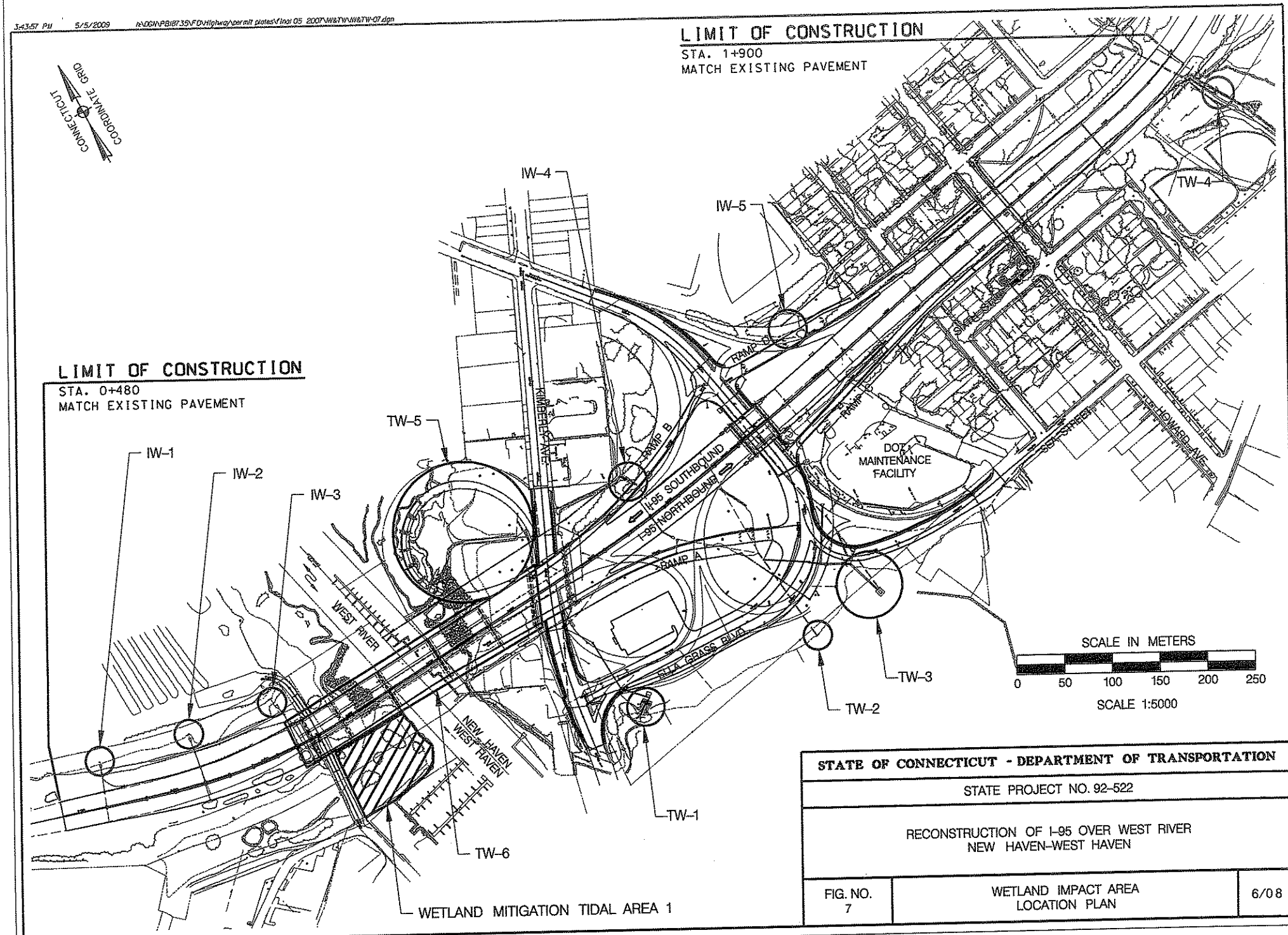
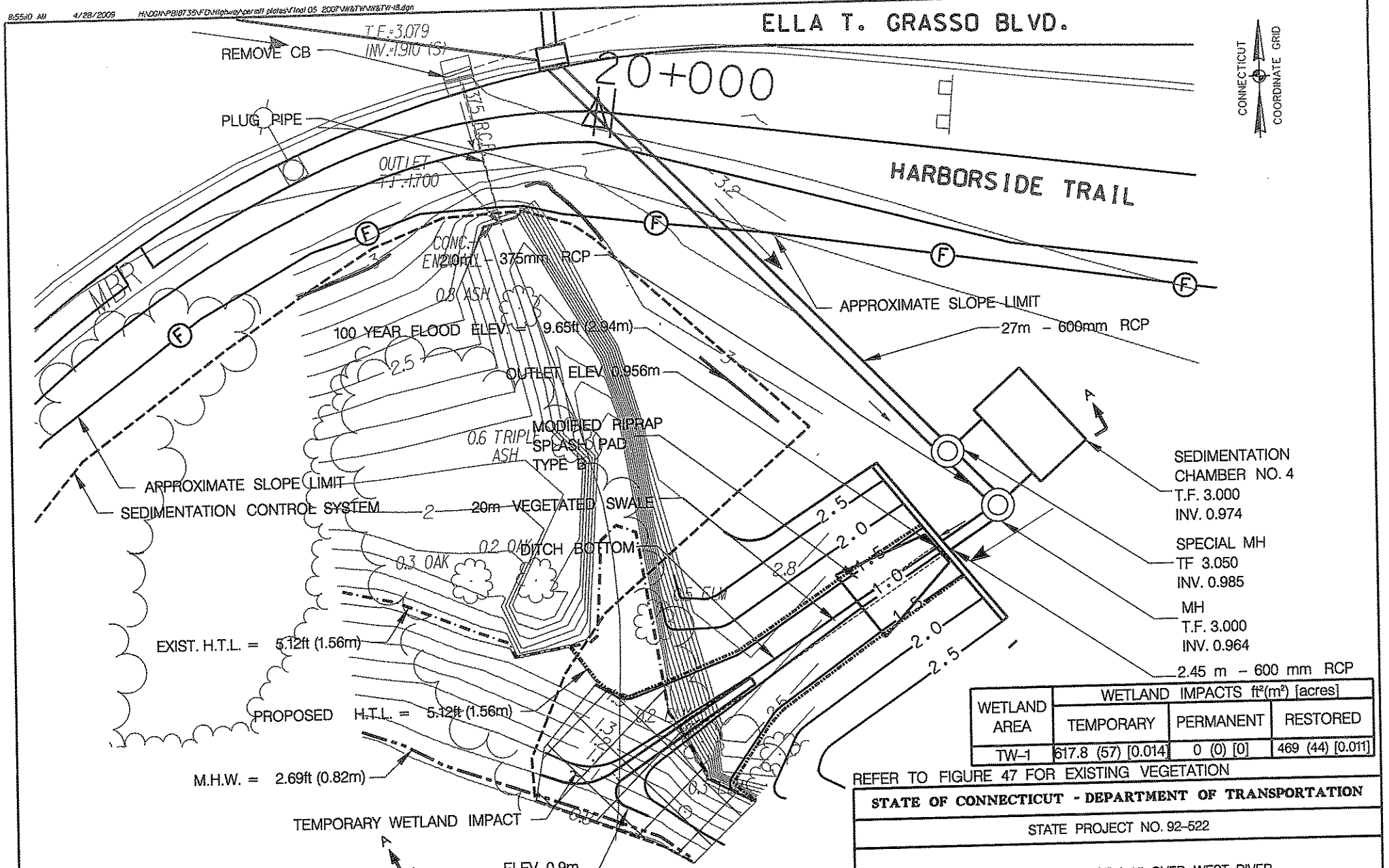


STATE OF CONNECTICUT - DEPARTMENT OF TRANSPORTATION		
STATE PROJECT NO. 92-522		
RECONSTRUCTION OF I-95 OVER WEST RIVER NEW HAVEN–WEST HAVEN		
FIG. NO. 7	WETLAND IMPACT AREA LOCATION PLAN	6/08



WETLAND AREA	WETLAND IMPACTS ft²(m²) [acres]		
	TEMPORARY	PERMANENT	RESTORED
TW–1	617.8 (57) [0.014]	0 (0) [0]	469 (44) [0.011]

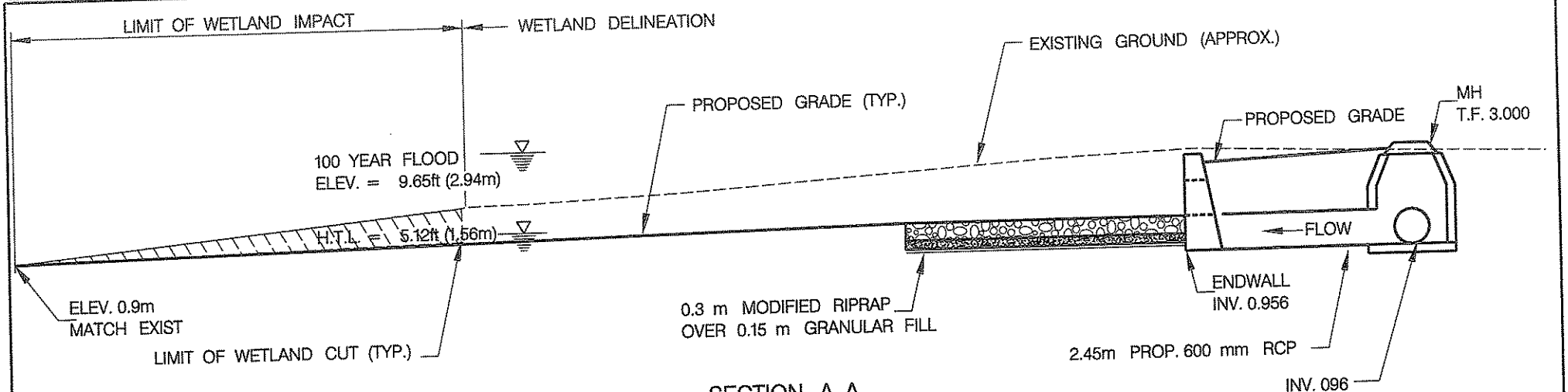
REFER TO FIGURE 47 FOR EXISTING VEGETATION

STATE OF CONNECTICUT - DEPARTMENT OF TRANSPORTATION

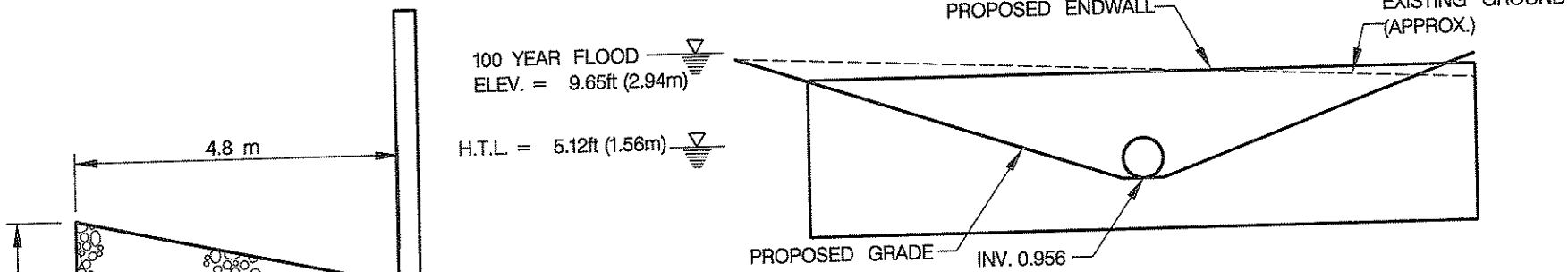
STATE PROJECT NO. 92–522

RECONSTRUCTION OF I–95 OVER WEST RIVER
NEW HAVEN–WEST HAVEN

FIG. NO.	TIDAL WETLAND IMPACT TW–1 ELLA T. GRASSO BLVD. STA. 10+044, 40.8M RT 1 OF 2	REV.
18		6/08



SECTION A–A
(REFER TO FIGURE 18)



DETAIL
MODIFIED RIPRAP SPLASH PAD TYPE B

WEST ELEVATION
(LOOKING EAST)

WETLAND AREA	VOLUME OF CUT/FILL yd³ (m³)	
	CUT	FILL
TW–1	34.7 (26.6)	0 (0)

SCALE IN METERS
0 1 2 3 4 5
SCALE 1:100

STATE OF CONNECTICUT - DEPARTMENT OF TRANSPORTATION		
STATE PROJECT NO. 92–522		
RECONSTRUCTION OF I–95 OVER WEST RIVER NEW HAVEN–WEST HAVEN		
FIG. NO. 19	TIDAL WETLAND IMPACT TW–1 ELLA T. GRASSO BLVD. STA. 10+044, 40.8M RT 2 OF 2	6/08

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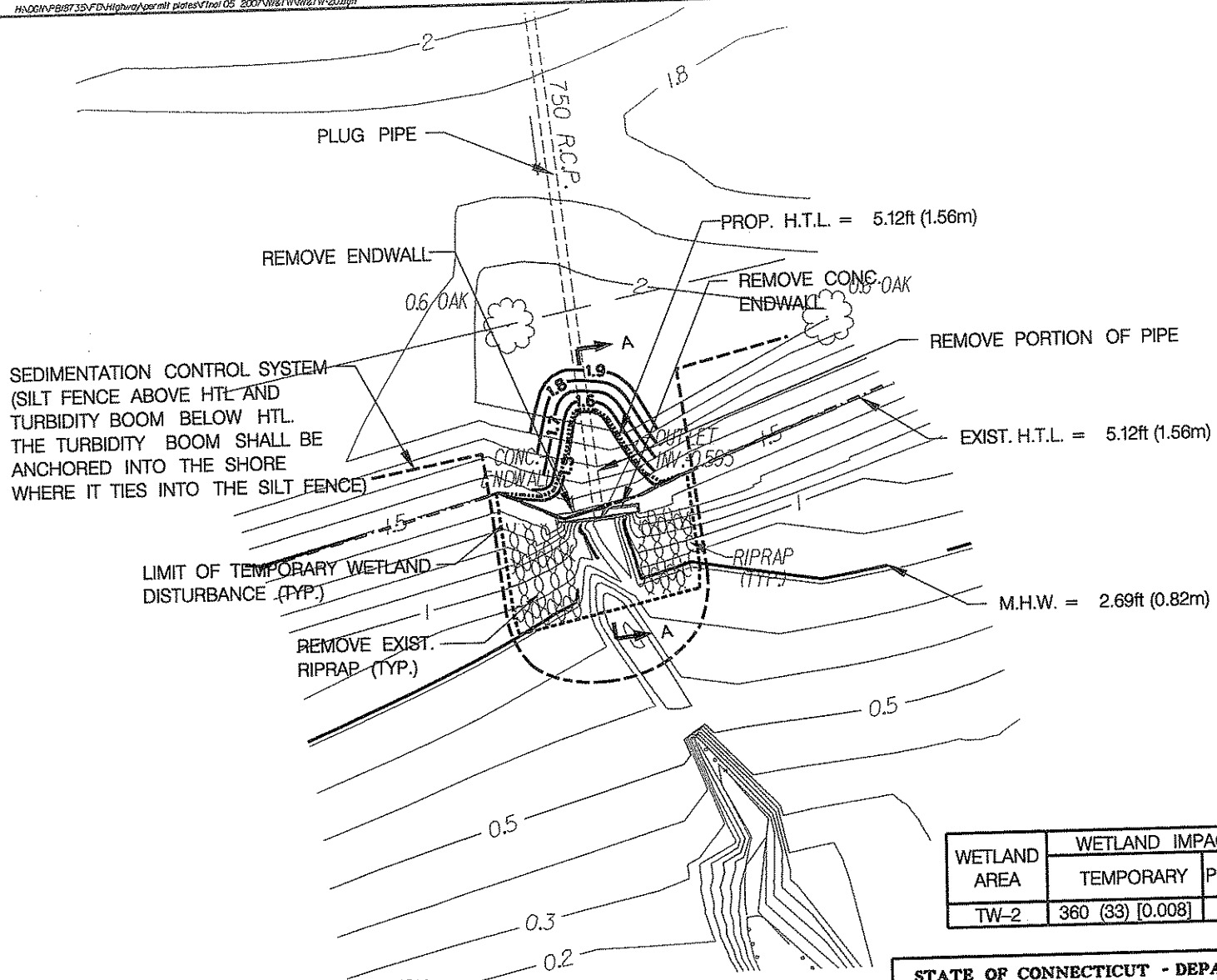


CONNECTICUT COORDINATE GRID

WETLAND AREA	WETLAND IMPACTS ft² (m²) [acres]		
	TEMPORARY	PERMANENT	RESTORED
TW–2	360 (33) [0.008]	0 (0) [0]	473 (44) [0.011]

NOTE:

RESTORED AREA TO BE GRADED WITH SOIL TO MATCH NATIVE SOIL PROPERTIES (SEE STRUCTURAL SOIL SPECIFICATION) EROSION CONTROL MATTING TO BE USED TO STABILIZE THE AREA UNTIL VEGETATION HAS ESTABLISHED. EROSION CONTROL MATTING TO BE BIODEGRADABLE. COORDINATE WITH CONNDOT OFFICE OF ENVIRONMENTAL PLANNING FOR PROPER INSTALLATION AND DISPOSAL METHODS.

SCALE IN METERS

0 2.5 5 7.5 10 12.5

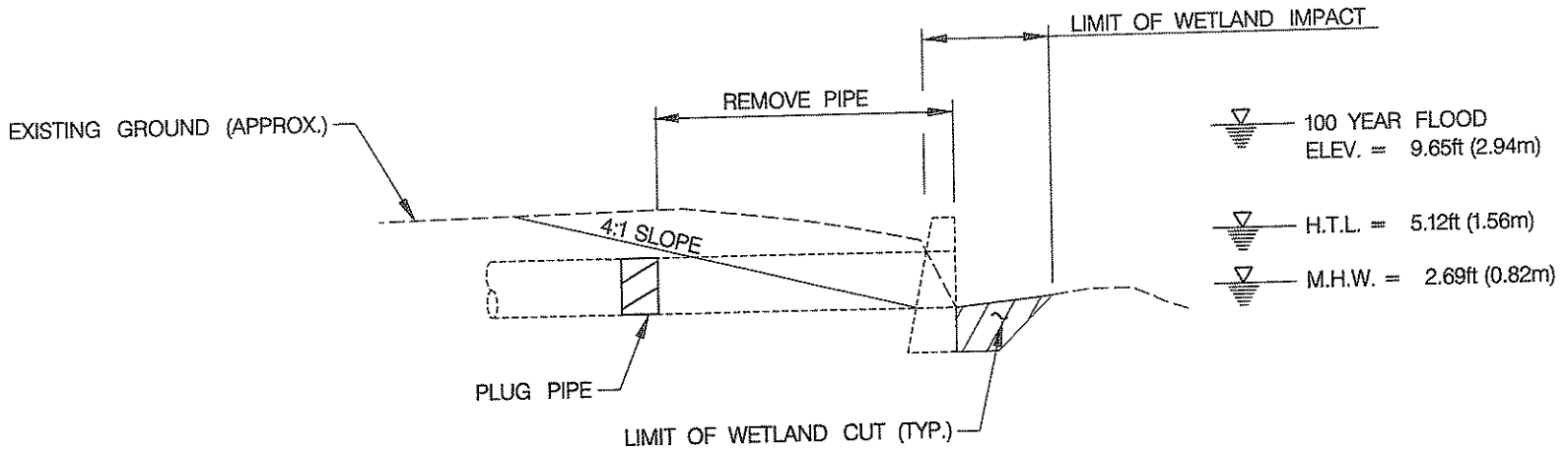
SCALE 1:250

STATE OF CONNECTICUT - DEPARTMENT OF TRANSPORTATION

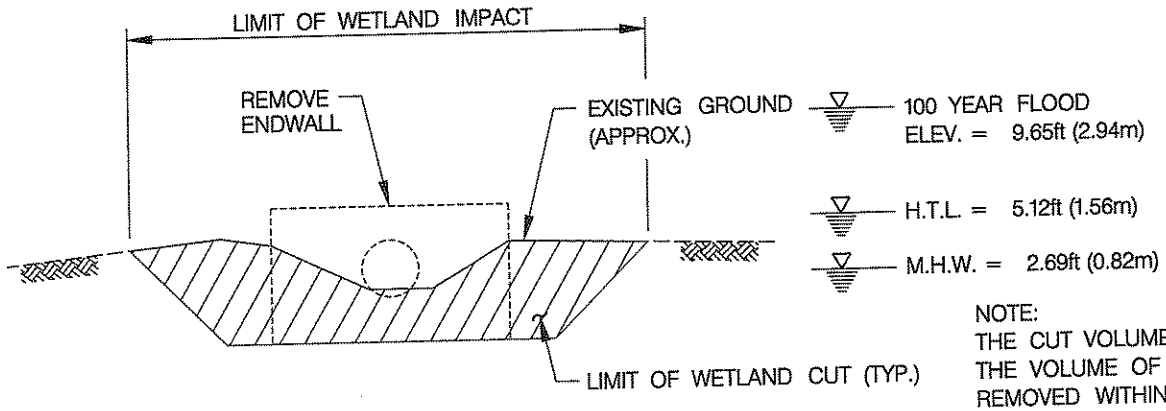
STATE PROJECT NO. 92–522

RECONSTRUCTION OF I–95 OVER WEST RIVER
NEW HAVEN–WEST HAVEN

FIG. NO.	WETLAND IMPACT TW–2 ELLA T. GRASSO BLVD. STA. 10+223, 65.0M RT 1 OF 2	REV.
20		6/08



SECTION A–A
(REFER TO FIGURE 20)



SOUTH ELEVATION
(LOOKING NORTH)

NOTE:
THE CUT VOLUME SHOWN INCLUDES THE VOLUME OF STRUCTURE TO BE REMOVED WITHIN THE WETLANDS.

WETLAND AREA	VOLUME OF CUT/FILL yd³ (m³)	
	CUT	FILL
TW–2	61.4 (46.9)	61.4 (46.9)

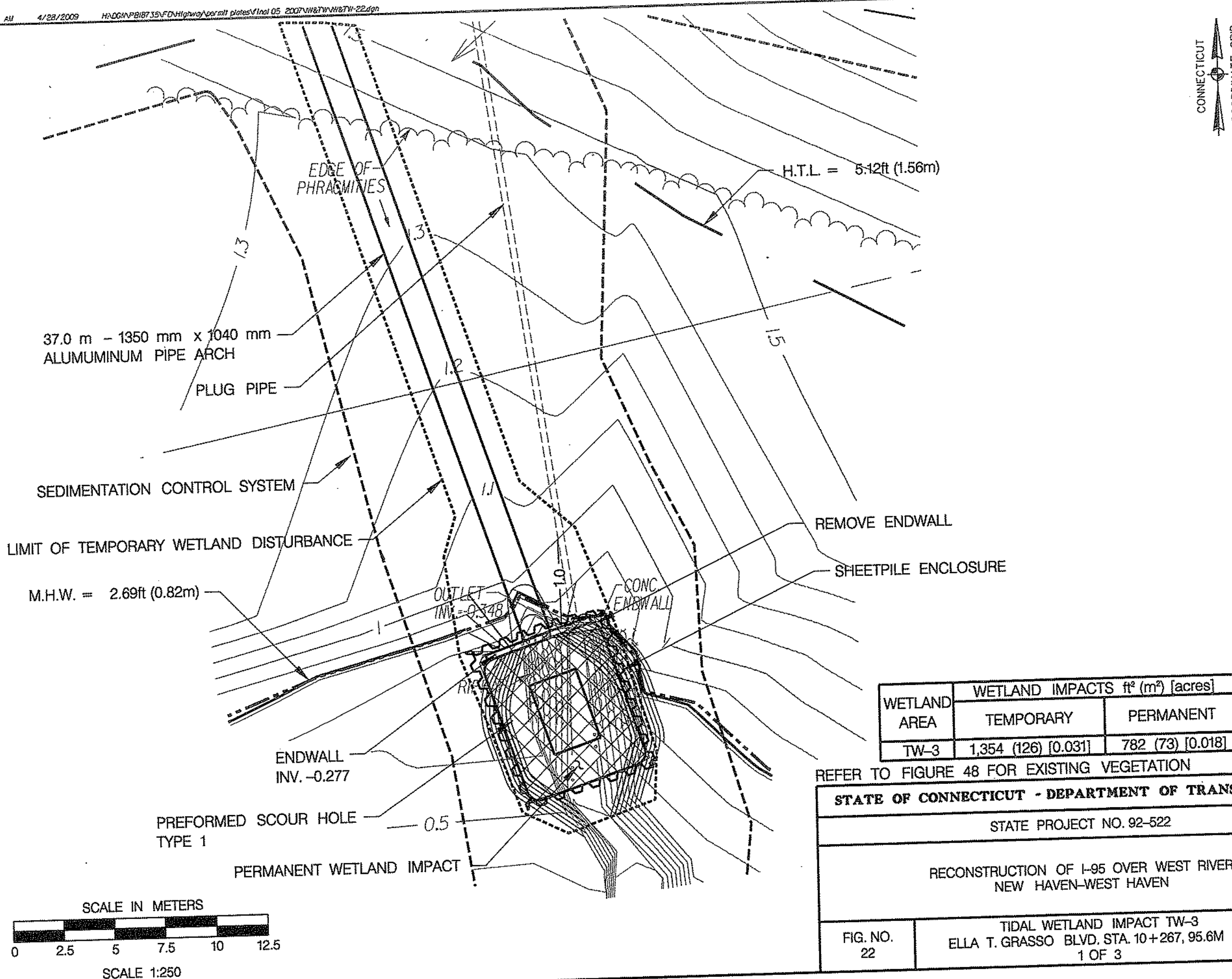
SCALE IN METERS
0 1 2 3 4 5
SCALE 1:100

STATE OF CONNECTICUT - DEPARTMENT OF TRANSPORTATION

STATE PROJECT NO. 92–522

RECONSTRUCTION OF I–95 OVER WEST RIVER
NEW HAVEN–WEST HAVEN

FIG. NO.	WETLAND IMPACT TW–2 ELLA T. GRASSO BLVD. STA. 10+223, 65.0M RT 2 OF 2	REV.
21		6/08



WETLAND AREA	WETLAND IMPACTS ft² (m²) [acres]		
	TEMPORARY	PERMANENT	RESTORED
TW-3	1,354 (126) [0.031]	782 (73) [0.018]	0 (0) [0]

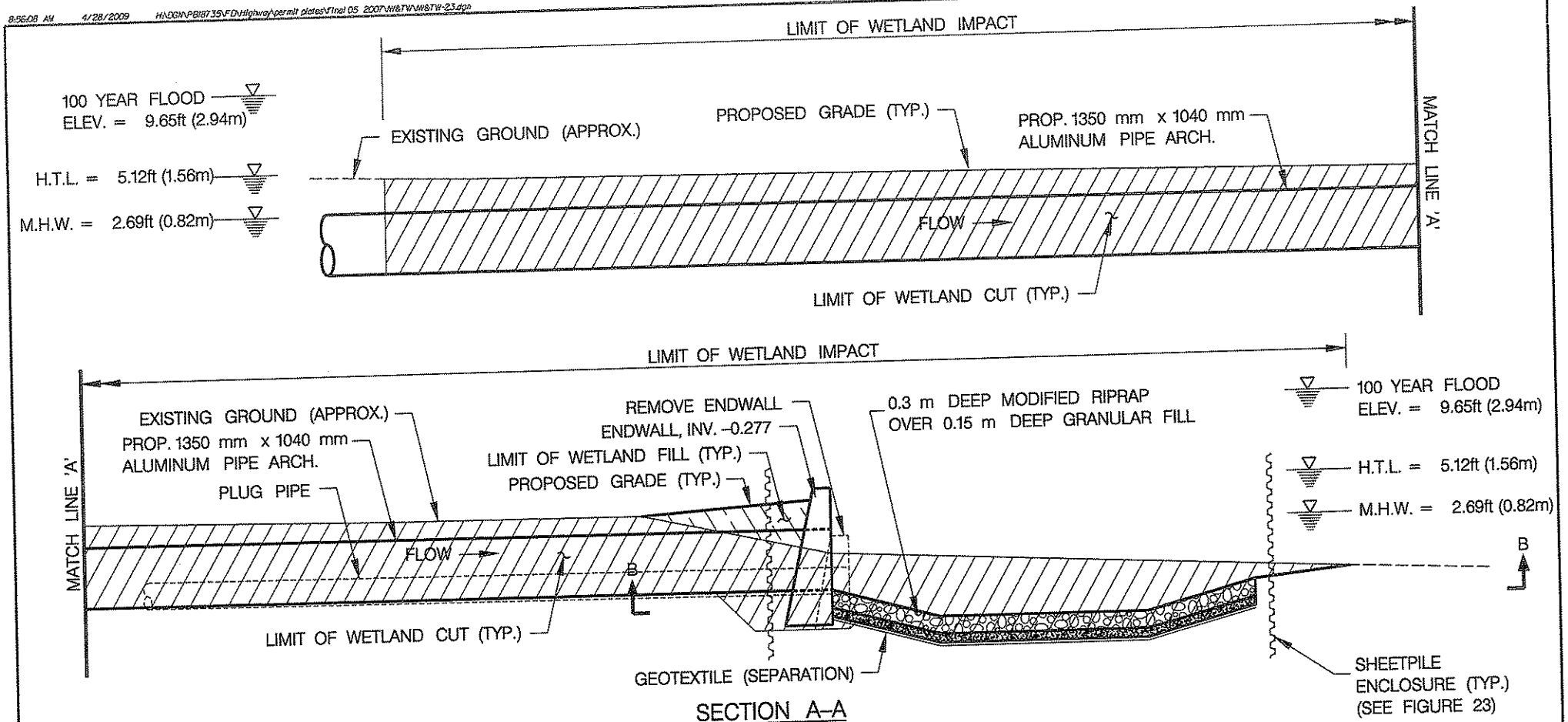
REFER TO FIGURE 48 FOR EXISTING VEGETATION

STATE OF CONNECTICUT - DEPARTMENT OF TRANSPORTATION

STATE PROJECT NO. 92-522

RECONSTRUCTION OF I-95 OVER WEST RIVER
NEW HAVEN-WEST HAVEN

FIG. NO.		REV.
22	TIDAL WETLAND IMPACT TW-3 ELLA T. GRASSO BLVD. STA. 10+267, 95.6M RT 1 OF 3	6/08



SECTION A–A
(REFER TO FIGURE 22)

NOTE:
THE CUT VOLUME SHOWN INCLUDES THE VOLUME OF STRUCTURE TO BE REMOVED WITHIN THE WETLANDS.

WETLAND AREA	VOLUME OF CUT/FILL yd³ (m³)	
	CUT	FILL
TW–3	410.2 (313.6)	505.6 (386.5)

NOTE:

RESTORED AREA TO BE GRADED WITH SOIL TO MATCH NATIVE SOIL PROPERTIES (SEE STRUCTURAL SOIL SPECIFICATION) EROSION CONTROL MATTING TO BE USED TO STABILIZE THE AREA UNTIL VEGETATION HAS ESTABLISHED. EROSION CONTROL MATTING TO BE BIODEGRADABLE. COORDINATE WITH CONNDOT OFFICE OF ENVIRONMENTAL PLANNING FOR PROPER INSTALLATION AND DISPOSAL METHODS.

SCALE IN METERS
0 1 2 3 4 5
SCALE 1:100

STATE OF CONNECTICUT - DEPARTMENT OF TRANSPORTATION

STATE PROJECT NO. 92–522

RECONSTRUCTION OF I–95 OVER WEST RIVER
NEW HAVEN–WEST HAVEN

FIG. NO.	TIDAL WETLAND IMPACT TW–3 ELLA T. GRASSO BLVD. STA. 10+267, 95.6M RT 2 OF 3	REV.
23		6/08

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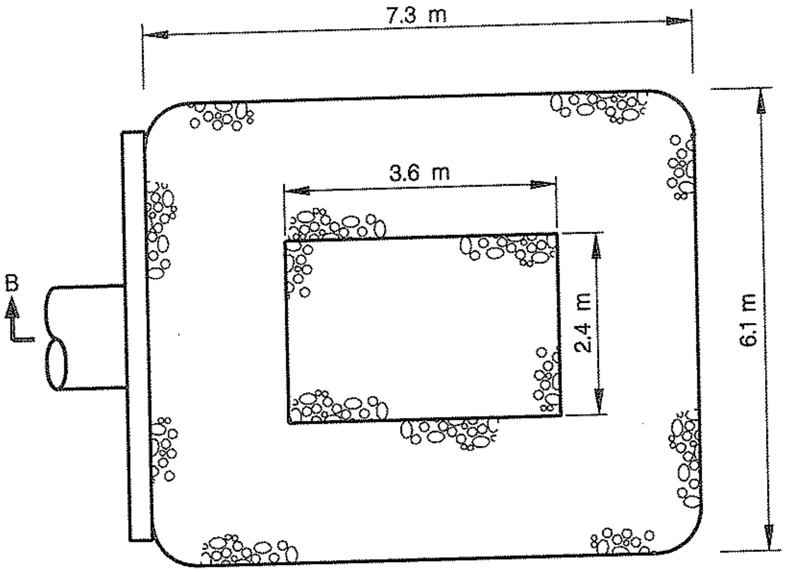
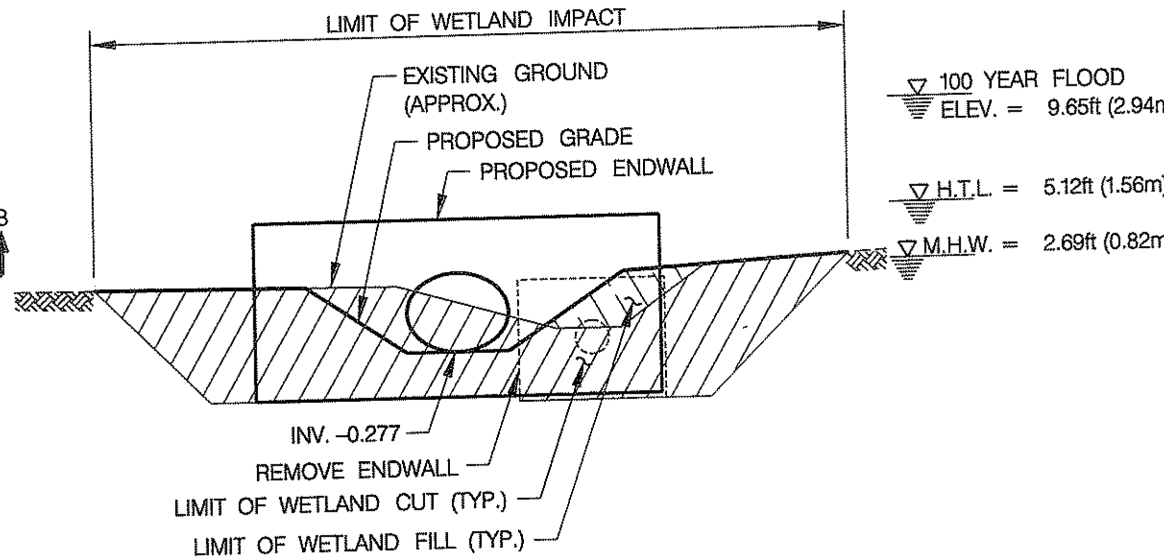


SECTION B–B
PREFORMED SCOUR HOLE TYPE 1



SOUTH ELEVATION
(LOOKING NORTH)

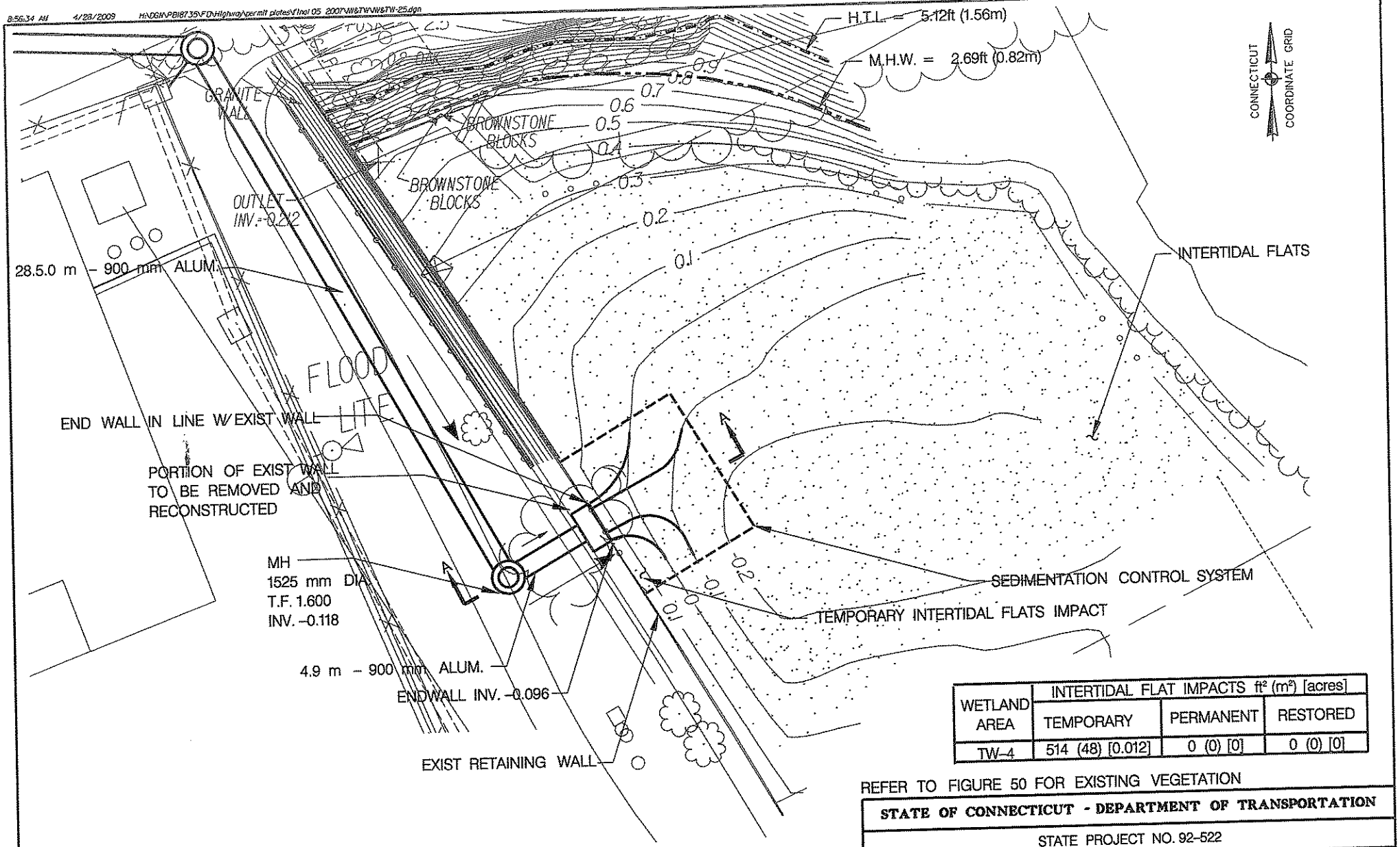
SCALE 1:100

STATE OF CONNECTICUT - DEPARTMENT OF TRANSPORTATION

STATE PROJECT NO. 92–522

RECONSTRUCTION OF I–95 OVER WEST RIVER
NEW HAVEN–WEST HAVEN

FIG. NO. 24	TIDAL WETLAND IMPACT TW–3 ELLA T. GRASSO BLVD. STA. 10+267, 95.6M RT 3 OF 3	6/08



WETLAND AREA	INTERTIDAL FLAT IMPACTS ft² (m²) [acres]		
	TEMPORARY	PERMANENT	RESTORED
TW–4	514 (48) [0.012]	0 (0) [0]	0 (0) [0]

REFER TO FIGURE 50 FOR EXISTING VEGETATION

SCALE IN METERS

0 2.5 5 7.5 10 12.5

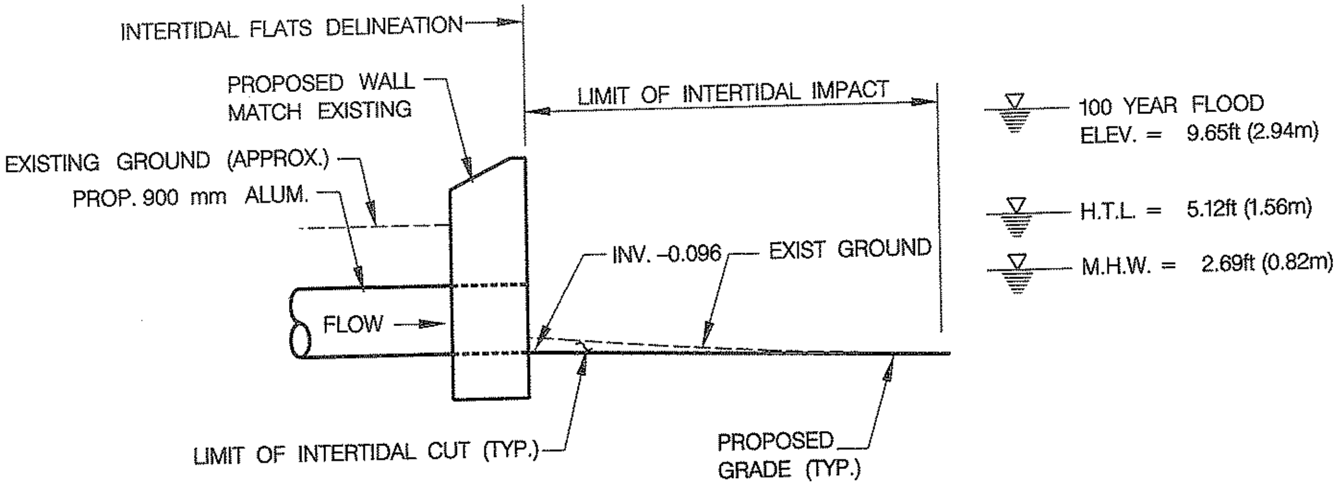
SCALE 1:250

STATE OF CONNECTICUT - DEPARTMENT OF TRANSPORTATION

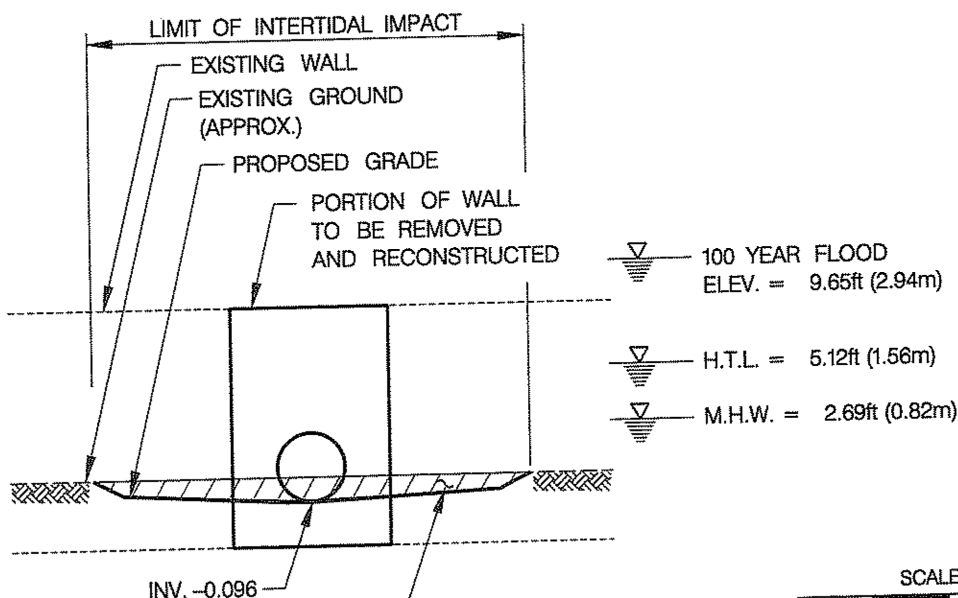
STATE PROJECT NO. 92–522

RECONSTRUCTION OF I–95 OVER WEST RIVER
NEW HAVEN–WEST HAVEN

FIG. NO. 25	TIDAL WETLAND IMPACT TW–4 I–95 STA. 1+900, 65.8m RT 1 OF 2	6/08



SECTION A-A
(REFER TO FIGURE 25)



EAST ELEVATION
(LOOKING WEST)

SCALE IN METERS
0 1 2 3 4 5
SCALE 1:100

INTERTIDAL AREA	VOLUME OF CUT/FILL yd³ (m³)	
	CUT	FILL
TW-4	9.46 (7.23)	0 (0)

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RECONSTRUCTION OF I-95 OVER WEST RIVER
NEW HAVEN-WEST HAVEN

FIG. NO. 26	TIDAL WETLAND IMPACT TW-4 I-95 STA. 1+900, 63.5m RT 2 OF 2	6/08

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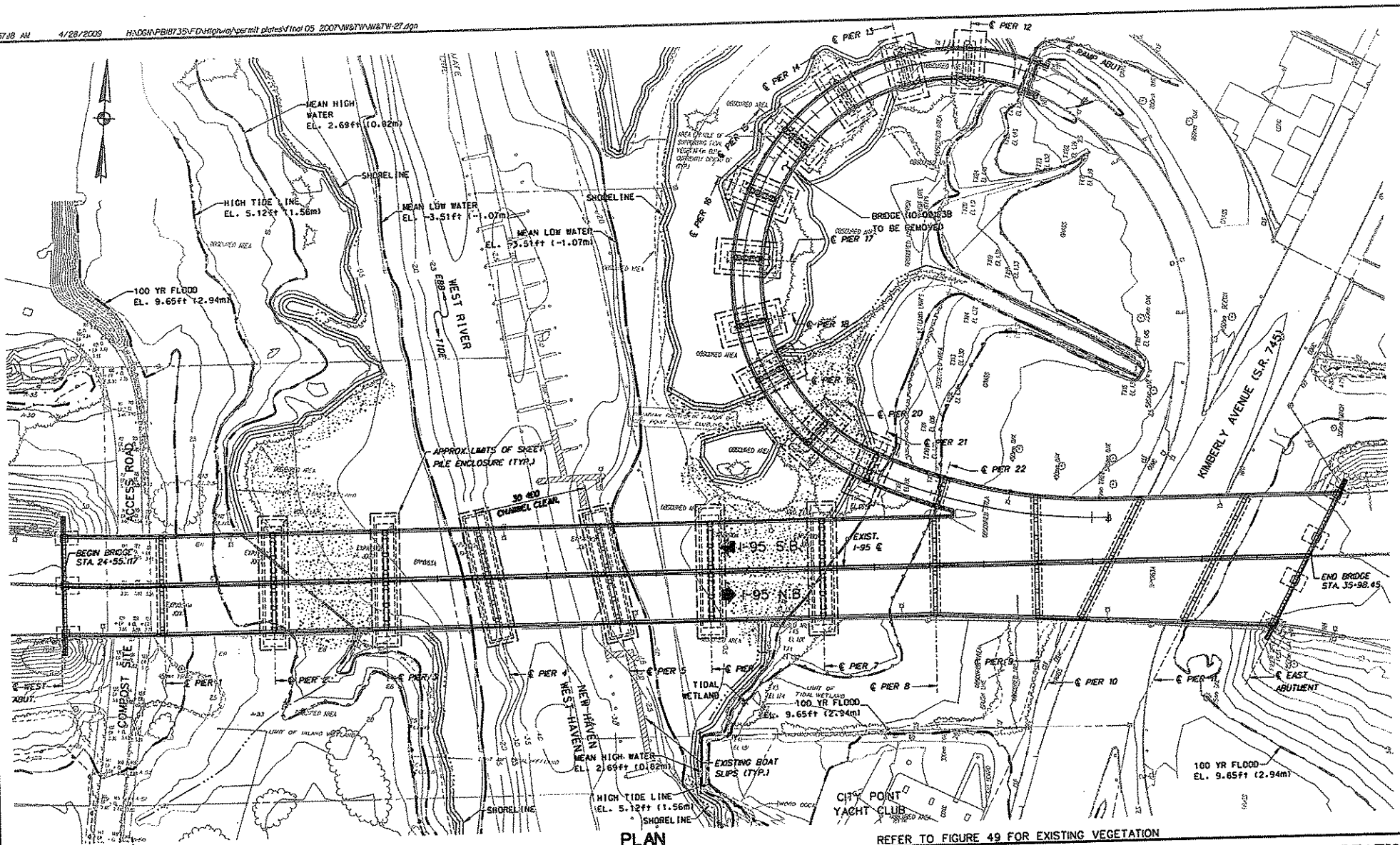

PLAN

REFER TO FIGURE 49 FOR EXISTING VEGETATION

NOTES:

1. INFORMATION REFERRING TO THE EXISTING STRUCTURE HAS BEEN TAKEN FROM THE ORIGINAL DESIGN DRAWINGS DATED 1955.
2. STATIONING SHOWN IS IN ENGLISH UNITS.
3. FOR 100 YEAR AND TIDAL WETLAND IMPACTS, SEE FIGURES 3 AND 8, RESPECTIVELY.

SCALE IN METERS

0 20 40 60 80 100

SCALE 1:1500

LEGEND

MEAN LOW WATER LINE	
HIGH TIDE LINE	
100 YR FLOOD BOUNDARY	
MEAN HIGH WATER LINE	

WATER ELEVATIONS (NAVD 88)		
DESCRIPTION	ELEVATION FT	(M)
MEAN LOW WATER	-3.51	(-1.07)
MEAN HIGH WATER	2.69	(0.82)
HIGH TIDE LINE	5.12	(1.56)
100-YR. FLOODPLAIN (FEMA)	9.65	(2.94)

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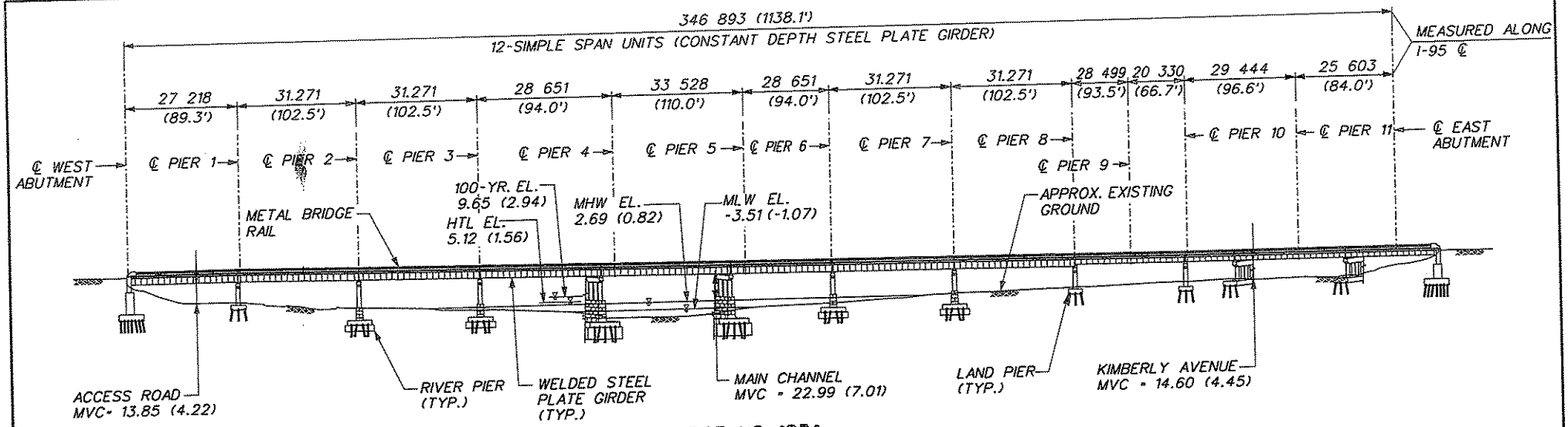
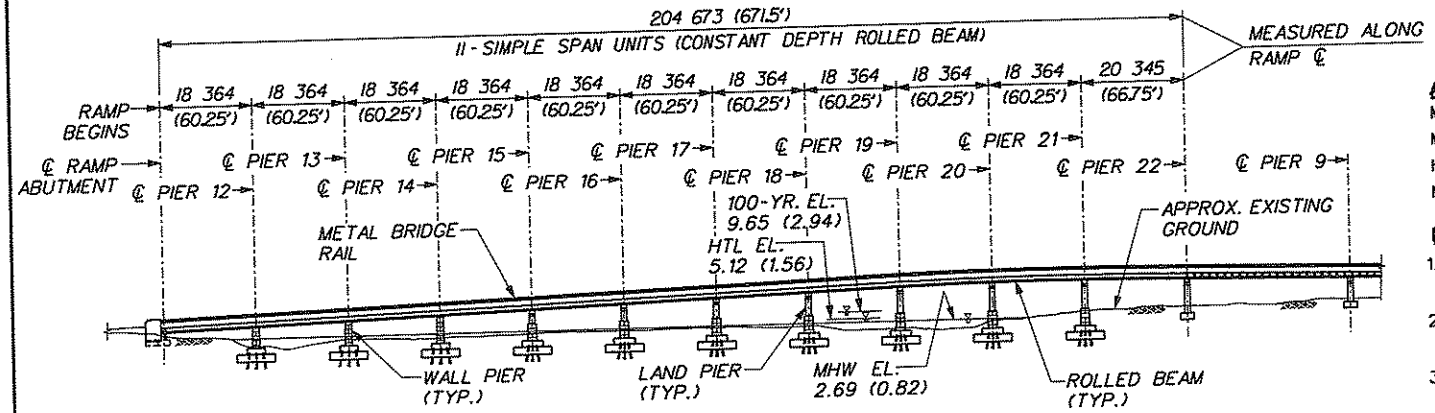
RECONSTRUCTION OF I-95 OVER WEST RIVER
NEW HAVEN-WEST HAVEN

FIG. NO.	IMPACT AREA TW-5 & TW-6 EXISTING BRIDGE DEMOLITION PLAN	6/08
27		



BRIDGE NO. 163A
SOUTH ELEVATION



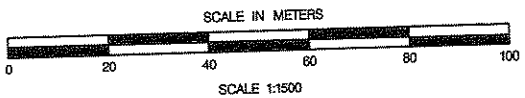
BRIDGE NO. 163B
WEST ELEVATION (DEVELOPED)

ABBREVIATIONS:

MHW: MEAN HIGH WATER
MLW: MEAN LOW WATER
HTL: HIGH TIDE LINE
MVC: MINIMUM VERTICAL CLEARANCE

NOTES:

1. EXISTING STRUCTURE DIMENSIONS SHOWN HAVE BEEN TAKEN FROM THE ORIGINAL DESIGN DRAWINGS DATED 1955.
2. ALL DIMENSIONS SHOWN ARE IN MILLIMETERS EXCEPT IF NOTED OTHERWISE.
3. ALL ELEVATIONS ARE GIVEN IN METERS AND ARE BASED ON N.A.V.D. 1988.
4. FOR 100 YEAR AND TIDAL WETLAND IMPACTS, SEE FIGURES 3 AND 8, RESPECTIVELY.

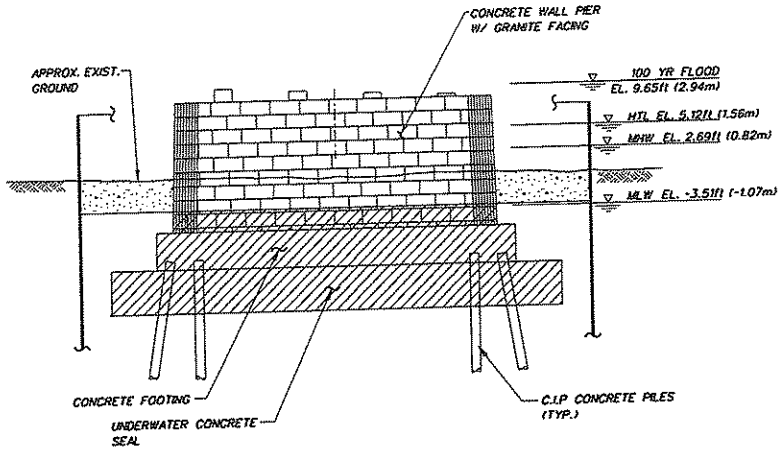


STATE OF CONNECTICUT - DEPARTMENT OF TRANSPORTATION

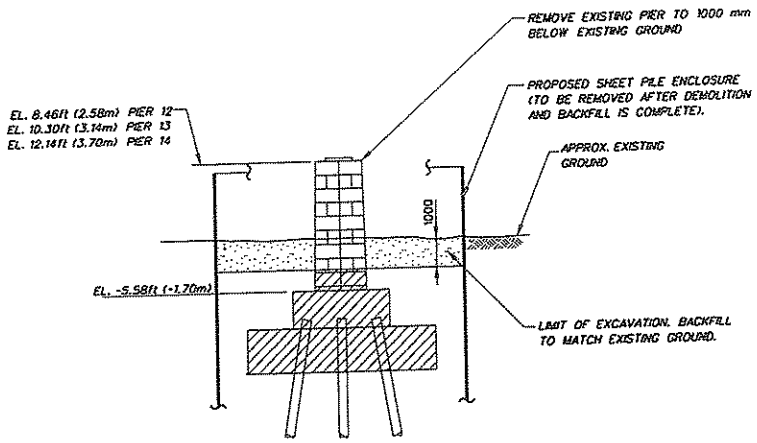
STATE PROJECT NO. 92-522

RECONSTRUCTION OF I-95 OVER WEST RIVER
NEW HAVEN-WEST HAVEN

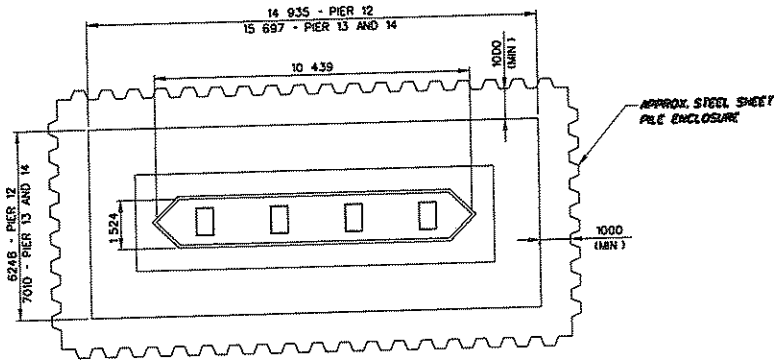
FIG. NO.	IMPACT AREA TW-5 & TW-6 EXISTING BRIDGE ELEVATIONS	6/08
28		



ELEVATION



END VIEW



PLAN

NOTES:

1. THIS DRAWING SHOWS BASIC SIMPLIFIED PIER DETAILS ONLY.
2. CROSS-HATCHED AREAS SHOWN ON THIS DRAWING INDICATES EXISTING PIER COMPONENTS TO REMAIN. ALL OTHER PIER COMPONENTS TO BE REMOVED.
3. FOR 100 YEAR AND TIDAL WETLAND IMPACTS, SEE FIGURES 3 AND 8, RESPECTIVELY..

PIER REMOVAL SEQUENCE:

1. CONSTRUCT STEEL SHEET PILE ENCLOSURE, REMOVE OBSTRUCTIONS AS NECESSARY.
2. EXCAVATE WITHIN ENCLOSURE TO PIER REMOVAL ELEVATION. ALL MATERIAL EXCAVATED WITHIN THE ENCLOSURE SHALL BE REMOVED AND DISPOSED OF AT AN APPROVED UPLAND DISPOSAL SITE.
3. DEMOLISH REINFORCED CONCRETE PIER TO THE ELEVATION INDICATED. REMOVE ALL DEMOLITION DEBRIS.
4. BACKFILL IN VEGETATED WETLAND AREAS SHALL CONSIST OF NATURAL OR MANMADE PLANTING SUBSTRATE OR TOPSOIL, CONSISTING OF SOILS CONTAINING NOT LESS THAN 75% SAND BY WEIGHT AND AN ORGANIC CONTENT OF NOT LESS THAN 10% AND NOT MORE THAN 15%
5. REMOVE STEEL SHEET PILE ENCLOSURE IN ITS ENTIRETY AFTER BACKFILL HAS BEEN COMPLETED AND ACCEPTED BY THE ENGINEER.

STATE OF CONNECTICUT - DEPARTMENT OF TRANSPORTATION

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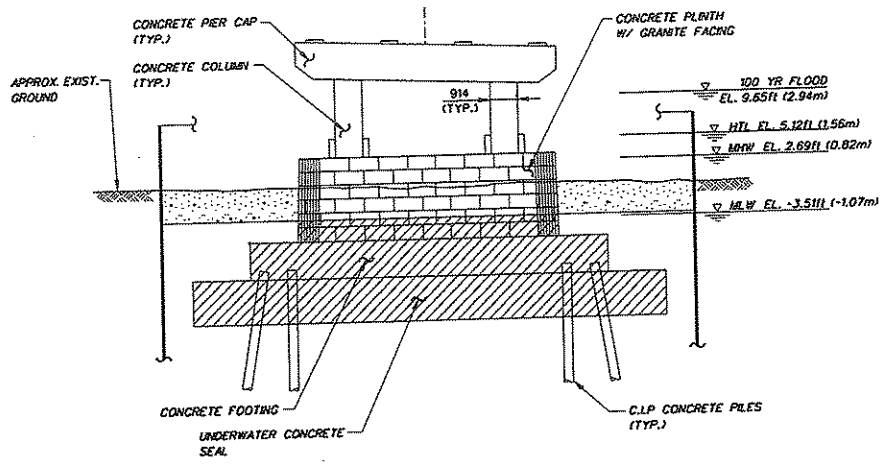
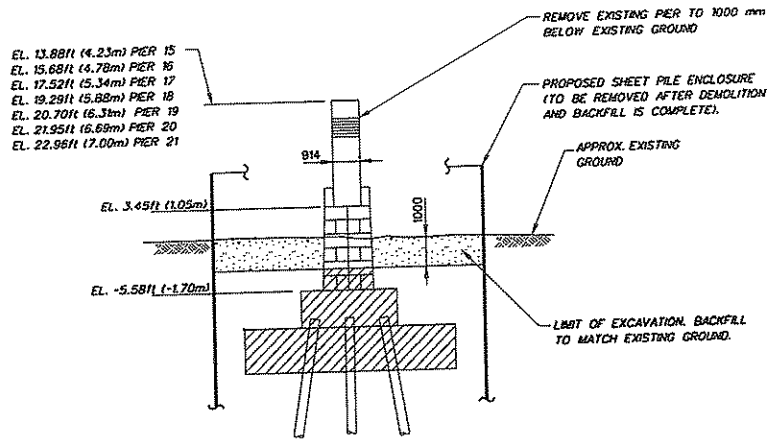
RECONSTRUCTION OF I-95 OVER WEST RIVER
NEW HAVEN-WEST HAVEN

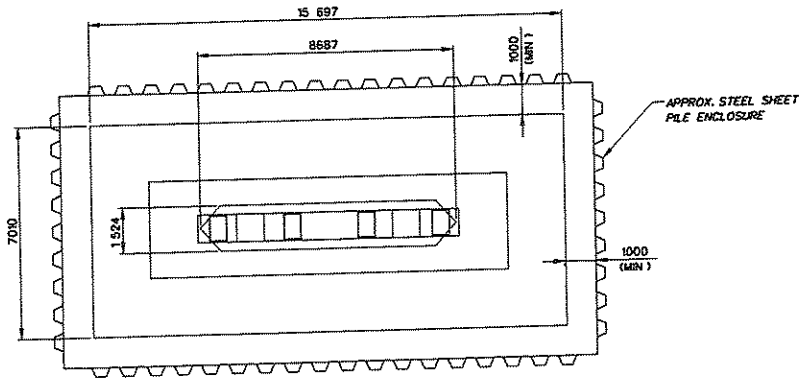
FIG. NO.	IMPACT AREA TW-5 PIER REMOVAL DETAILS: PIERS 12, 13 & 14	6/08
29		



ELEVATION



END VIEW



PLAN

NOTES:

1. THIS DRAWING SHOWS BASIC SIMPLIFIED PIER DETAILS ONLY.
2. CROSS-HATCHED AREAS SHOWN ON THIS DRAWING INDICATES EXISTING PIER COMPONENTS TO REMAIN. ALL OTHER PIER COMPONENTS TO BE REMOVED.
3. FOR 100 YEAR AND TIDAL WETLAND IMPACTS, SEE FIGURES 3 AND 8, RESPECTIVELY.

PIER REMOVAL SEQUENCE:

1. CONSTRUCT STEEL SHEET PILE ENCLOSURE, REMOVE OBSTRUCTIONS AS NECESSARY.
2. EXCAVATE WITHIN ENCLOSURE TO PIER REMOVAL ELEVATION. ALL MATERIAL EXCAVATED WITHIN THE ENCLOSURE SHALL BE REMOVED AND DISPOSED OF AT AN APPROVED UPLAND DISPOSAL SITE.
3. DEMOLISH REINFORCED CONCRETE PIER TO THE ELEVATION INDICATED. REMOVE ALL DEMOLITION DEBRIS.
4. BACKFILL IN VEGETATED WETLAND AREAS SHALL CONSIST OF NATURAL OR MANMADE PLANTING SUBSTRATE OR TOPSOIL, CONSISTING OF SOILS CONTAINING NOT LESS THAN 75% SAND BY WEIGHT AND AN ORGANIC CONTENT OF NOT LESS THAN 10% AND NOT MORE THAN 15%
5. REMOVE STEEL SHEET PILE ENCLOSURE IN ITS ENTIRETY AFTER BACKFILL HAS BEEN COMPLETED AND ACCEPTED BY THE ENGINEER.

STATE OF CONNECTICUT - DEPARTMENT OF TRANSPORTATION

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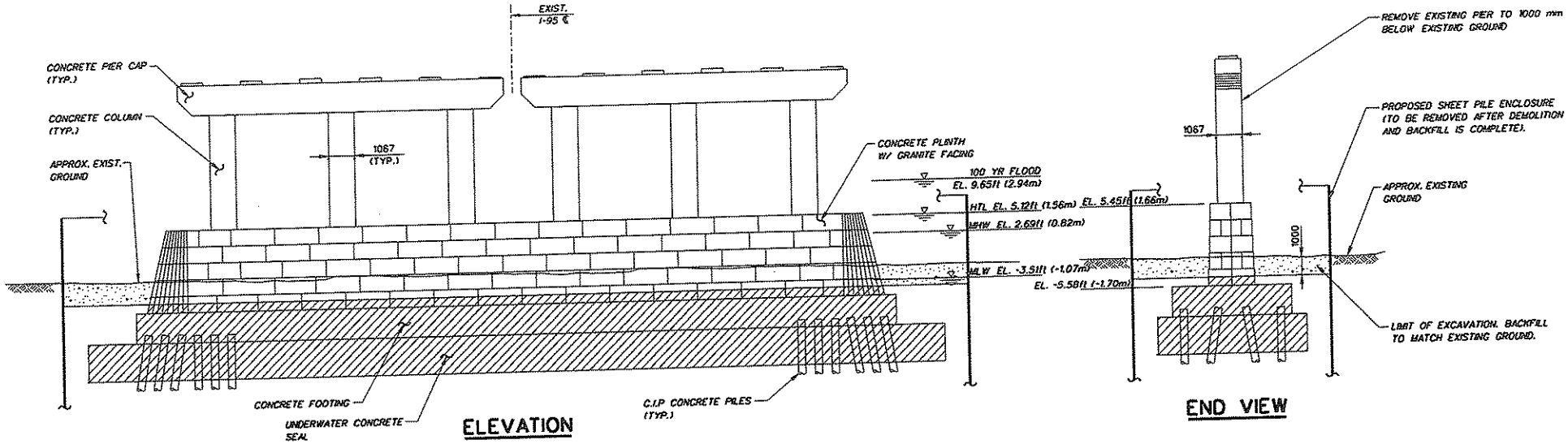
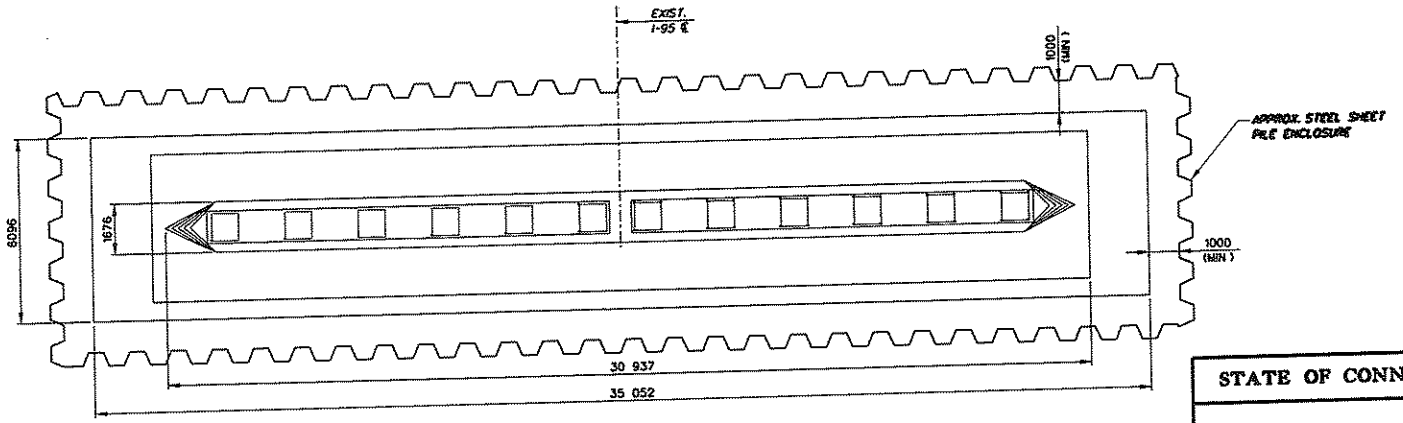
RECONSTRUCTION OF I-95 OVER WEST RIVER
NEW HAVEN-WEST HAVEN

FIG. NO.	IMPACT AREA TW-5 PIER REMOVAL DETAILS: PIERS 15 – 21	6/08
30		





NOTES:

1. THIS DRAWING SHOWS BASIC SIMPLIFIED PIER DETAILS ONLY.
2. CROSS-HATCHED AREAS SHOWN ON THIS DRAWING INDICATES EXISTING PIER COMPONENTS TO REMAIN. ALL OTHER PIER COMPONENTS TO BE REMOVED.
3. FOR 100 YEAR AND TIDAL WETLAND IMPACTS, SEE FIGURES 3 AND 8, RESPECTIVELY.

PIER REMOVAL SEQUENCE:

1. CONSTRUCT STEEL SHEET PILE ENCLOSURE, REMOVE OBSTRUCTIONS AS NECESSARY.
2. EXCAVATE WITHIN ENCLOSURE TO PIER REMOVAL ELEVATION. ALL MATERIAL EXCAVATED WITHIN THE ENCLOSURE SHALL BE REMOVED AND DISPOSED OF AT AN APPROVED UPLAND DISPOSAL SITE.
3. DEMOLISH REINFORCED CONCRETE PIER TO THE ELEVATION INDICATED. REMOVE ALL DEMOLITION DEBRIS.
4. BACKFILL IN VEGETATED WETLAND AREAS SHALL CONSIST OF NATURAL OR MANMADE PLANTING SUBSTRATE OR TOPSOIL, CONSISTING OF SOILS CONTAINING NOT LESS THAN 75% SAND BY WEIGHT AND AN ORGANIC CONTENT OF NOT LESS THAN 10% AND NOT MORE THAN 15%
5. REMOVE STEEL SHEET PILE ENCLOSURE IN ITS ENTIRETY AFTER BACKFILL HAS BEEN COMPLETED AND ACCEPTED BY THE ENGINEER.

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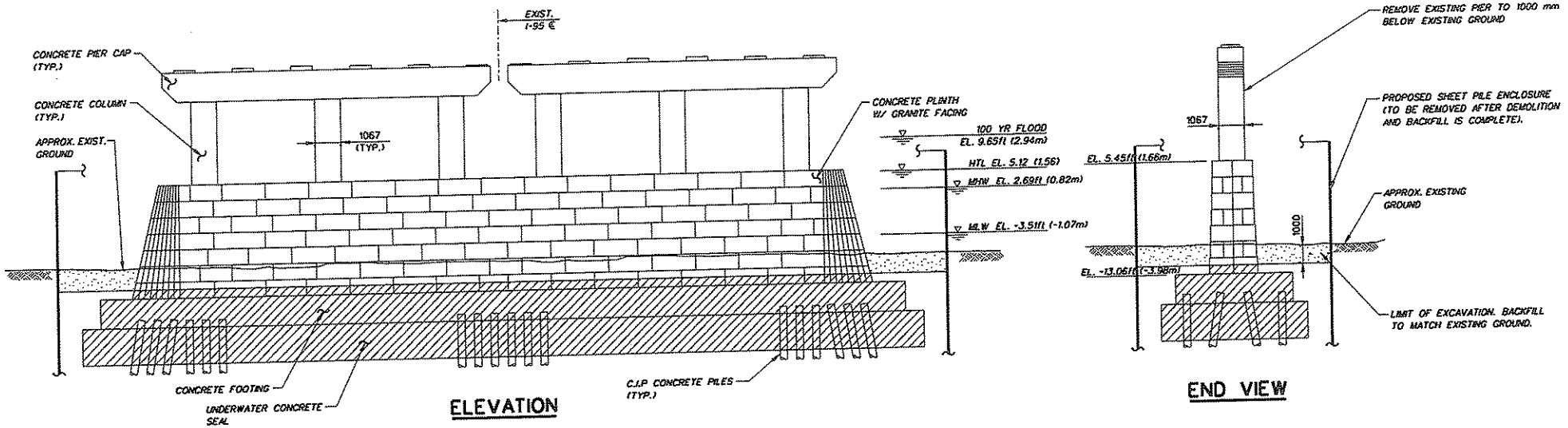
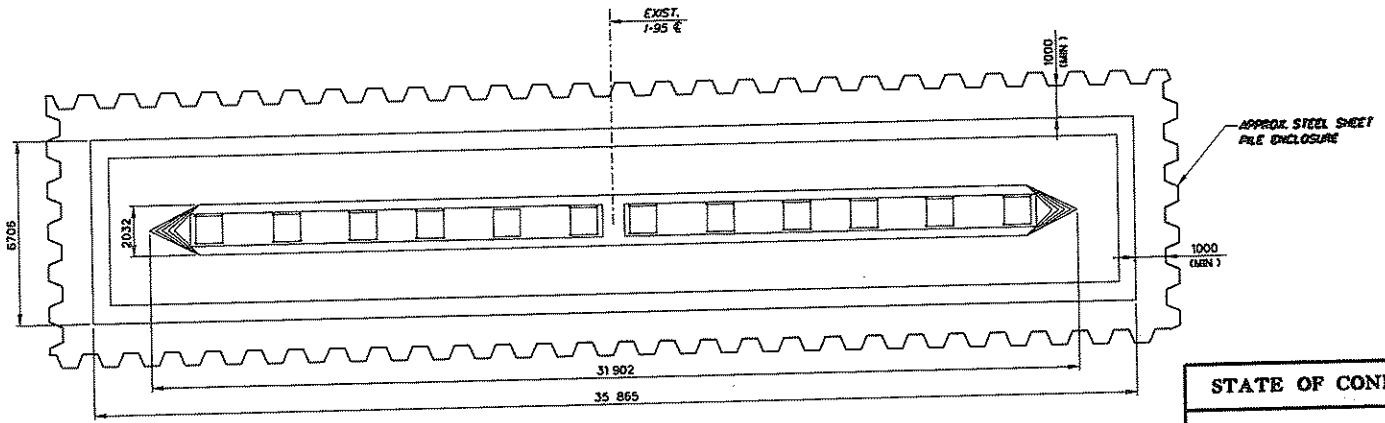
RECONSTRUCTION OF I-95 OVER WEST RIVER
NEW HAVEN-WEST HAVEN

FIG. NO.	IMPACT AREA TW-6 PIER REMOVAL DETAILS: PIERS 2, 3, 6 & 7	6/08
31		





NOTES:

1. THIS DRAWING SHOWS BASIC SIMPLIFIED PIER DETAILS ONLY.
2. CROSS-HATCHED AREAS SHOWN ON THIS DRAWING INDICATES EXISTING PIER COMPONENTS TO REMAIN. ALL OTHER PIER COMPONENTS TO BE REMOVED.
3. FOR 100 YEAR AND TIDAL WETLAND IMPACTS, SEE FIGURES 3 AND 8, RESPECTIVELY.

PIER REMOVAL SEQUENCE:

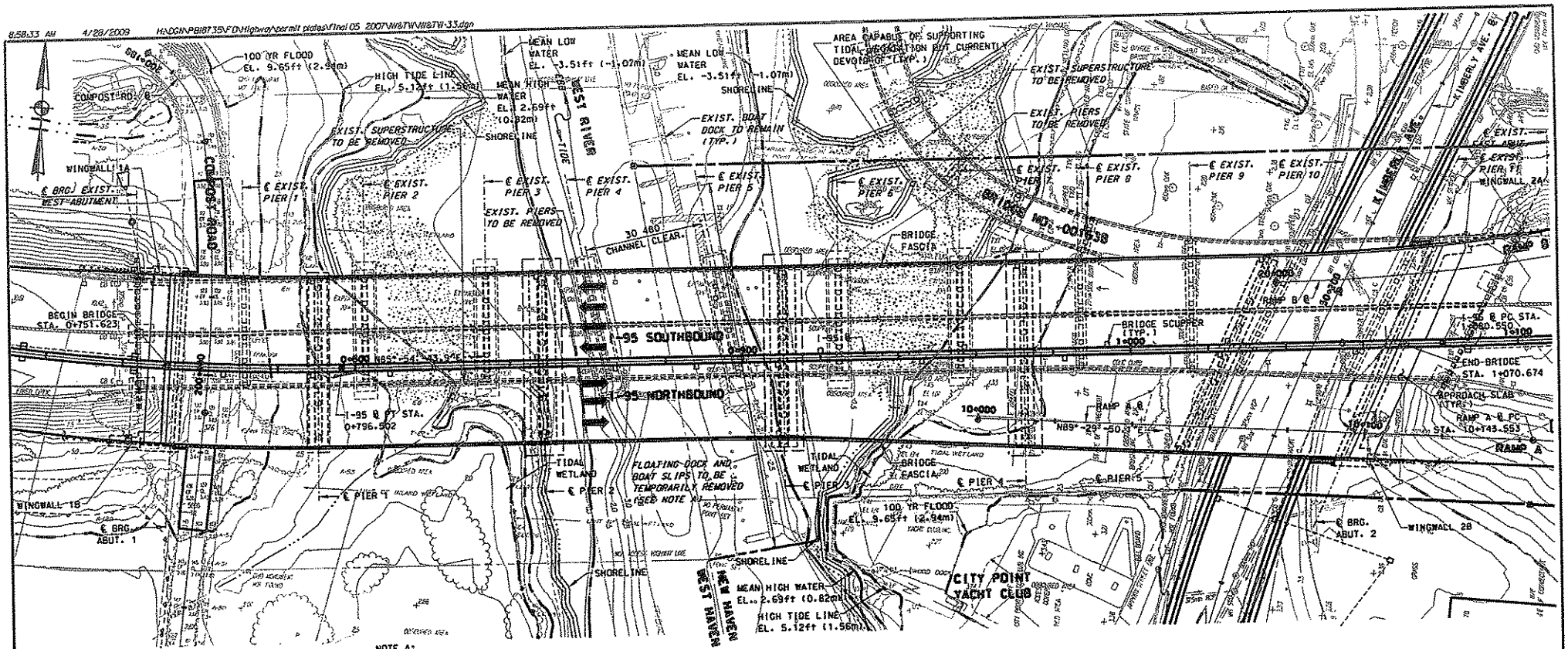
1. CONSTRUCT STEEL SHEET PILE ENCLOSURE, REMOVE OBSTRUCTIONS AS NECESSARY.
2. EXCAVATE WITHIN ENCLOSURE TO PIER REMOVAL ELEVATION. ALL MATERIAL EXCAVATED WITHIN THE ENCLOSURE SHALL BE REMOVED AND DISPOSED OF AT AN APPROVED UPLAND DISPOSAL SITE.
3. DEMOLISH REINFORCED CONCRETE PIER TO THE ELEVATION INDICATED. REMOVE ALL DEMOLITION DEBRIS.
4. BACKFILL TO RESTORE MUDLINE IN RIVER WITH "STRUCTURAL SOIL". "STRUCTURAL SOIL" IS SANDY LOAM, INCLUDING COARSE, FINE AND VERY FINE SANDY LOAM TO APPROXIMATE THE TEXTURAL CLASS OF EXISTING SOIL REMOVED FROM THIS AREA.
5. REMOVE STEEL SHEET PILE ENCLOSURE IN ITS ENTIRETY AFTER BACKFILL HAS BEEN COMPLETED AND ACCEPTED BY THE ENGINEER.

STATE OF CONNECTICUT - DEPARTMENT OF TRANSPORTATION

STATE PROJECT NO. 92-522

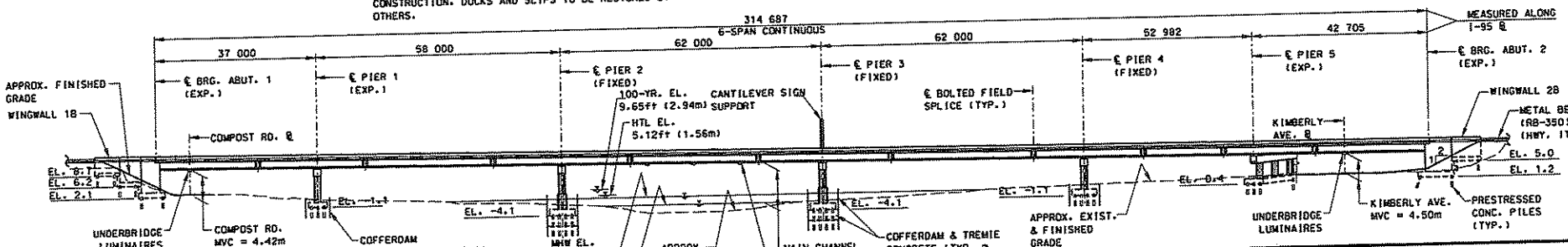
RECONSTRUCTION OF I-95 OVER WEST RIVER
NEW HAVEN-WEST HAVEN

FIG. NO.	IMPACT AREA TW-6 PIER REMOVAL DETAILS: PIERS 4 & 5	6/08
32		



PLAN

NOTE A:
FLOATING DOCKS AND BOAT SLIPS WITHIN LIMITS SHOWN TO BE TEMPORARILY REMOVED BY OTHERS. FOLLOWING CONSTRUCTION. DOCKS AND SLIPS TO BE RESTORED BY OTHERS.



ELEVATION

NOTE:
MVC: MINIMUM VERTICAL CLEARANCE
MHW: MEAN HIGH WATER
MLW: MEAN LOW WATER
HTL: HIGH TIDE LINE

NOTE:
FOR TIDAL WETALND IMPACTS, SEE FIGURE 4 AND TABLE 1 IN THE REGULATED ACTIVITIES SECTION

SCALE IN METERS
0 20 40 60 80 100
SCALE 1:1500

LEGEND

MEAN LOW WATER LINE	
HIGH TIDE LINE	
100 YR FLOOD BOUNDARY	
MEAN HIGH WATER LINE	

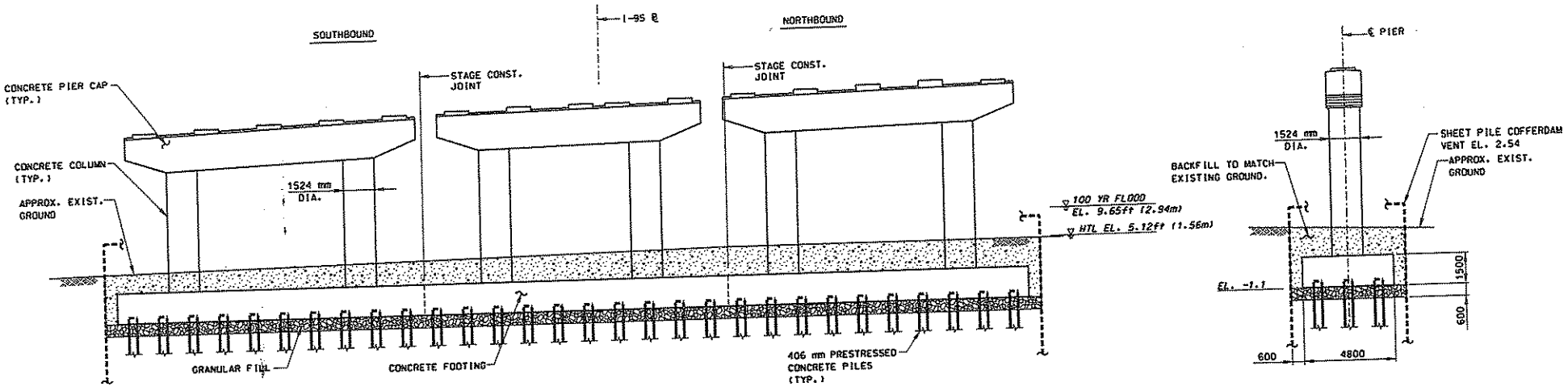
WATER ELEVATIONS (NAVD 88)	
DESCRIPTION	ELEVATION FT (M)
MEAN LOW WATER	-3.51 (-1.07)
MEAN HIGH WATER	2.69 (0.82)
HIGH TIDE LINE	5.12 (1.56)
100-YR. FLOODPLAIN (FEMA)	9.65 (2.94)

STATE OF CONNECTICUT - DEPARTMENT OF TRANSPORTATION

STATE PROJECT NO. 92-522

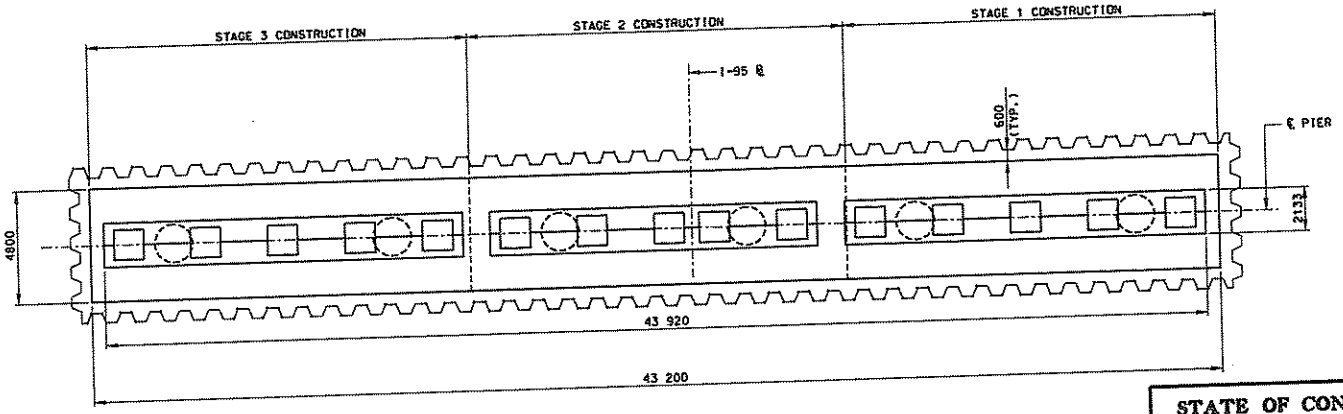
RECONSTRUCTION OF I-95 OVER WEST RIVER
NEW HAVEN-WEST HAVEN

FIG. NO.	IMPACT AREA TW-6 PROPOSED PLAN & ELEVATION	6/08
33		



ELEVATION

END VIEW



PLAN

NOTES:

1. THIS DRAWING SHOWS BASIC SIMPLIFIED PIER DETAILS ONLY.
2. FOR 100 YEAR AND TIDAL WETLAND IMPACTS, SEE FIGURES 3 AND 8, RESPECTIVELY.
3. BACKFILL IN VEGETATED WETLAND AREAS SHALL CONSIST OF NATURAL OR MANMADE PLANTING SUBSTRATE OR TOPSOIL, CONSISTING OF SOILS CONTAINING NOT LESS THAN 75% SAND BY WEIGHT AND AN ORGANIC CONTENT OF NOT LESS THAN 10% AND NOT MORE THAN 15%.

STATE OF CONNECTICUT - DEPARTMENT OF TRANSPORTATION		
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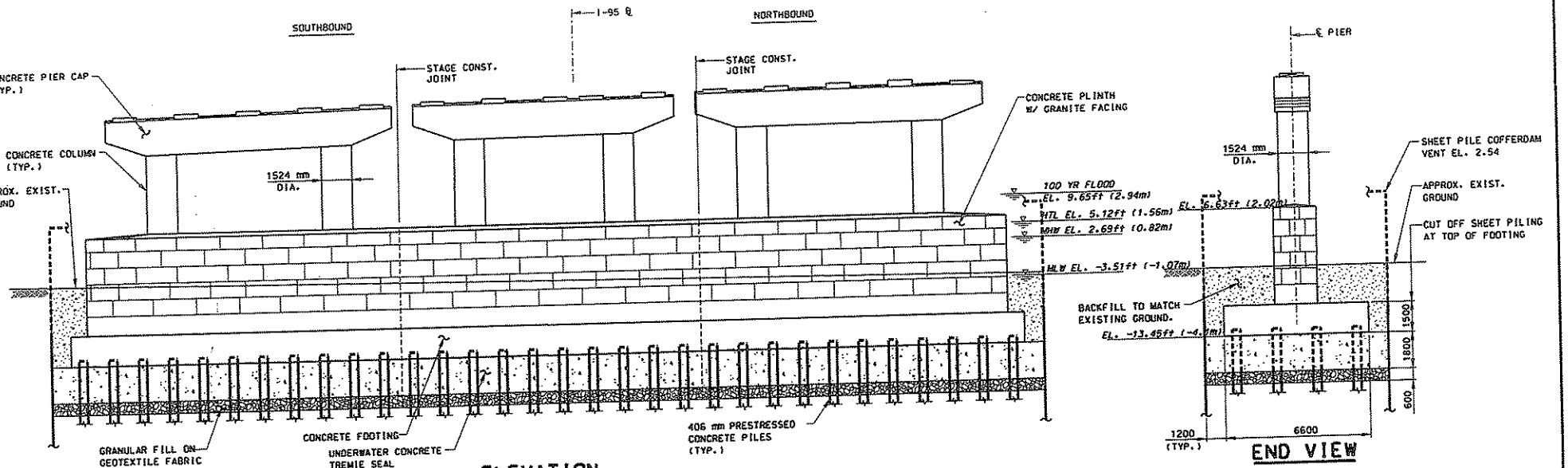
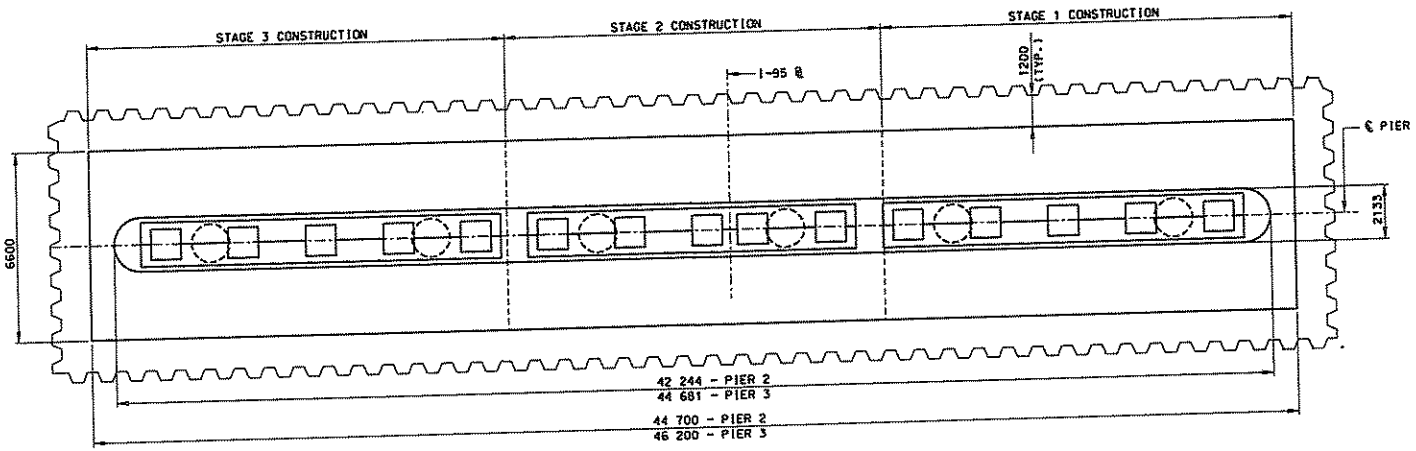
RECONSTRUCTION OF I-95 OVER WEST RIVER NEW HAVEN-WEST HAVEN		
FIG. NO. 34	IMPACT AREA TW-6 PROPOSED LAND PIER DETAILS: PIER 1	6/08





NOTES:

1. THIS DRAWING SHOWS BASIC SIMPLIFIED PIER DETAILS ONLY.
2. FOR 100 YEAR AND TIDAL WETLAND IMPACTS, SEE FIGURES 3 AND 8, RESPECTIVELY.

PIER CONSTRUCTION SEQUENCE:

1. INSTALL STEEL SHEET PILES FOR COFFERDAM.
2. EXCAVATE WITHIN COFFERDAM TO BOTTOM OF GRANULAR FILL ELEVATION. EXCAVATED MATERIAL SHALL BE REMOVED AND DISPOSED OF AT AN APPROVED UPLAND DISPOSAL SITE.
3. PLACE GEOTEXTILE FABRIC AND GRANULAR FILL WITHIN COFFERDAM.
4. DRIVE PRESTRESSED CONCRETE PILES TO REQUIRED ELEVATION.
5. PLACE UNDERWATER CONCRETE TREMIE SEAL.
6. DEWATER COFFERDAM.
7. CONSTRUCT PROPOSED PIER.
8. BACKFILL THE TOP 1 METER TO RESTORE MUDLINE IN RIVER WITH "STRUCTURAL SOIL". "STRUCTURAL SOIL" IS SANDY LOAM, INCLUDING COARSE, FINE AND VERY FINE SANDY LOAM TO APPROXIMATE THE TEXTURAL CLASS OF EXISTING SOIL REMOVED FROM THIS AREA. BACKFILL EXCAVATIONS BELOW 1 METER WITH GRANULAR FILL.
9. REMOVE COFFERDAM TO TOP OF FOOTING.

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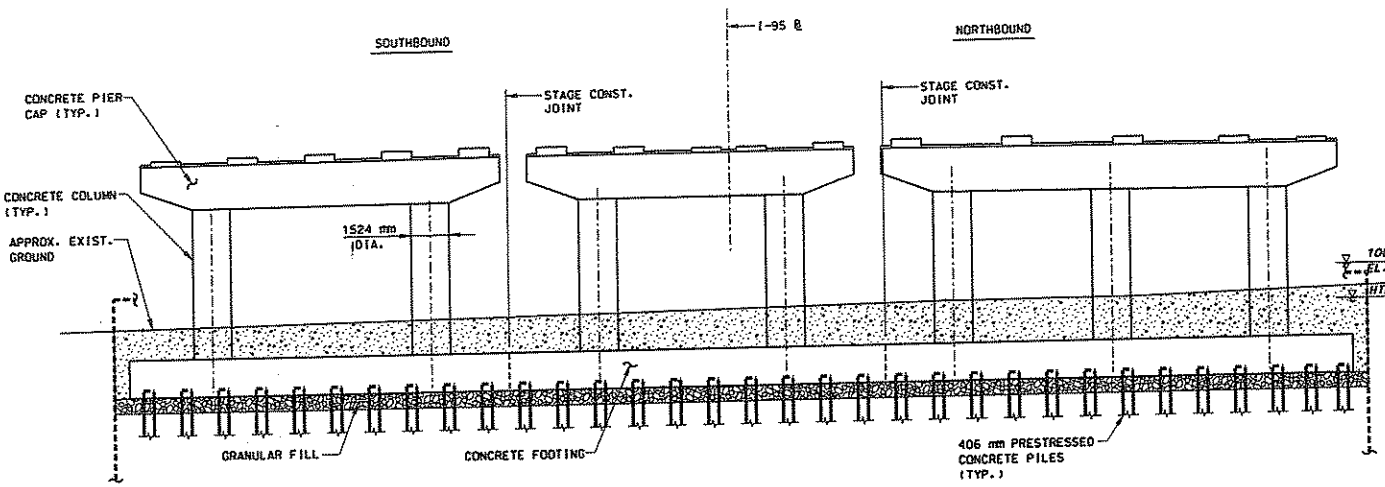
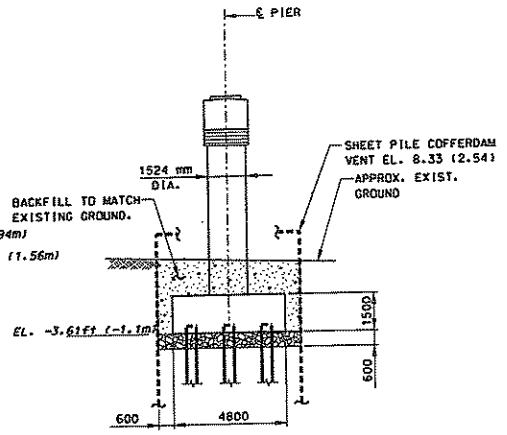
RECONSTRUCTION OF I-95 OVER WEST RIVER
NEW HAVEN-WEST HAVEN

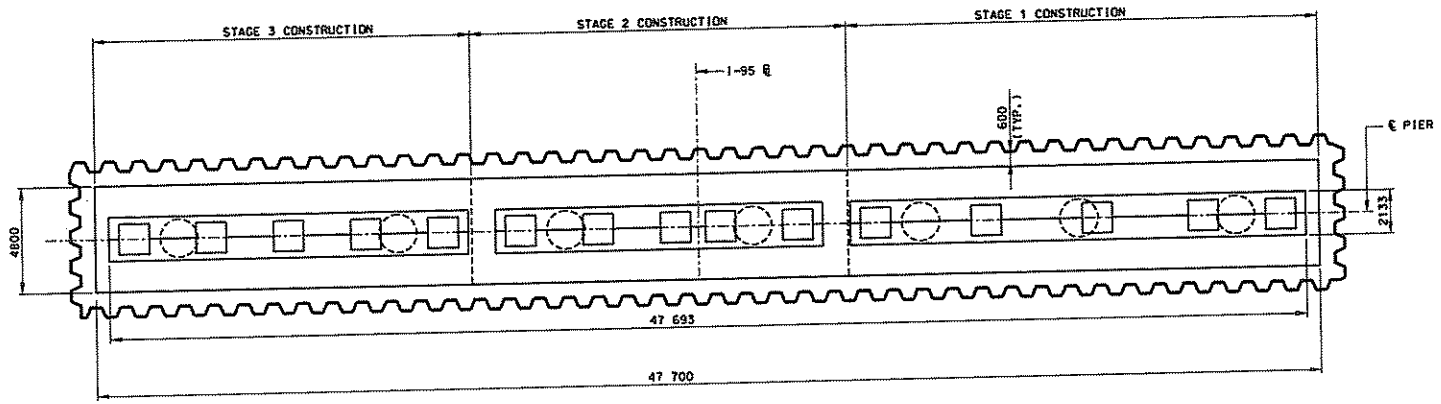
FIG. NO.	IMPACT AREA TW-6 PROPOSED RIVER PIER DETAILS PIERS 2 & 3	6/08
35		



ELEVATION



END VIEW



PLAN

NOTES:

1. THIS DRAWING SHOWS BASIC SIMPLIFIED PIER DETAILS ONLY.
2. FOR 100 YEAR AND TIDAL WETLAND IMPACTS, SEE FIGURES 3 AND 8, RESPECTIVELY.
3. BACKFILL IN VEGETATED WETLAND AREAS SHALL CONSIST OF NATURAL OR MANMADE PLANTING SUBSTRATE OR TOPSOIL, CONSISTING OF SOILS CONTAINING NOT LESS THAN 75% SAND BY WEIGHT AND AN ORGANIC CONTENT OF NOT LESS THAN 10% AND NOT MORE THAN 15%.

STATE OF CONNECTICUT - DEPARTMENT OF TRANSPORTATION

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RECONSTRUCTION OF I-95 OVER WEST RIVER
NEW HAVEN-WEST HAVEN

FIG. NO.	IMPACT AREA TW-6 PROPOSED LAND PIER DETAILS: PIER 4	6/08
36		

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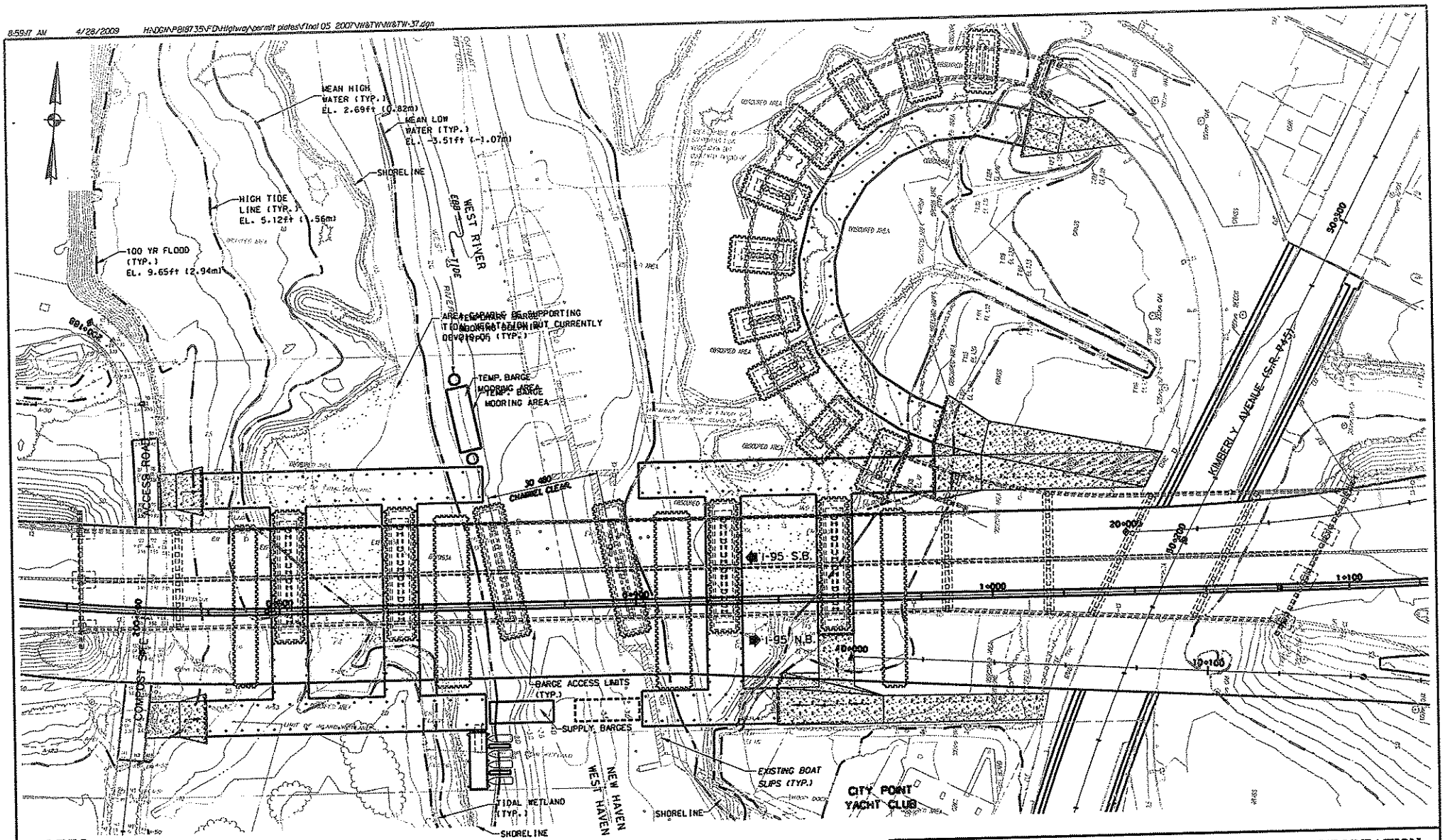

NOTES:

1. THE TEMPORARY TRESTLE IS TO BE USED TO PROVIDE ACCESS FOR THE CONSTRUCTION OF THE PROPOSED BRIDGE AND THE DEMOLITION OF THE EXISTING BRIDGE IN ORDER TO MINIMIZE IMPACTS TO THE EXISTING WETLANDS.
2. HATCHED AREA INDICATES LIMITS OF MINOR GRADING AND GRANULAR FILL FOR CONSTRUCTION ACCESS. THIS AREA SHALL BE RESTORED TO ITS ORIGINAL GRADE AT THE COMPLETION OF CONSTRUCTION.
3. BARGE ACCESS WILL BE RESTRICTED TO THE NAVIGATION CHANNEL ONLY. NO MORE THAN A SINGLE BARGE WILL BE ALLOWED IN THE CHANNEL AT ANY ONE TIME.
4. THE TEMPORARY TRESTLE SHALL BE REMOVED IN ITS ENTIRETY AT THE COMPLETION OF CONSTRUCTION. SEE FIGURE 4 AND TABLE 1 IN THE REGULATED ACTIVITIES SECTION FOR TEMPORARY IMPACTS.

PLAN

LEGEND

- MEAN LOW WATER LINE
- HIGH TIDE LINE
- 100 YR FLOOD BOUNDARY
- MEAN HIGH WATER LINE

SCALE IN METERS

0 20 40 60 80 100

SCALE 1:1500

STATE OF CONNECTICUT - DEPARTMENT OF TRANSPORTATION

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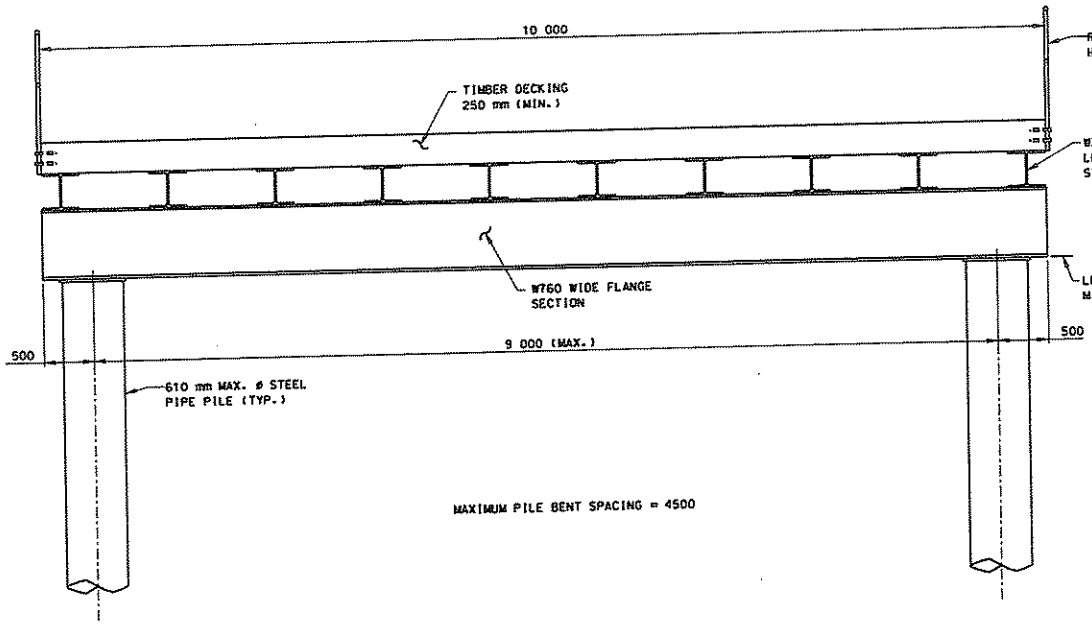
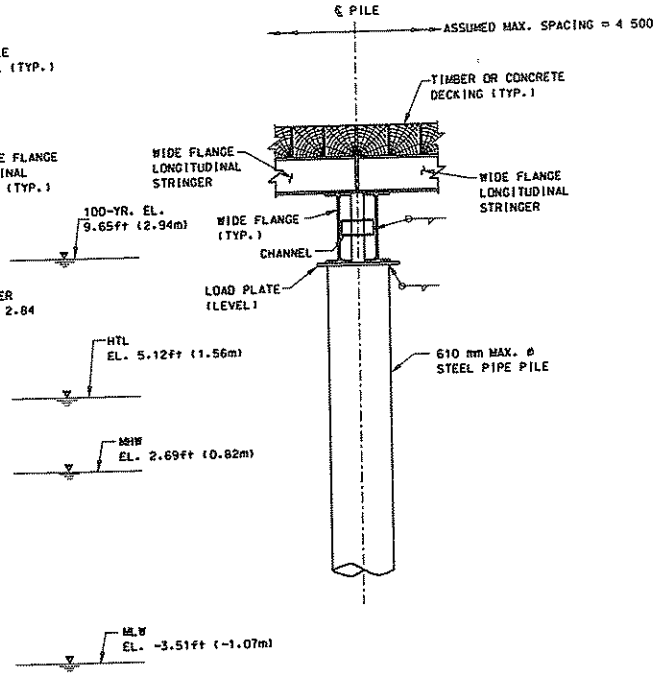
RECONSTRUCTION OF I-95 OVER WEST RIVER
NEW HAVEN-WEST HAVEN

FIG. NO.	IMPACT AREA TW-5 & TW-6 PROPOSED TRESTLE PLAN	6/08
37		



SECTION THRU TRESTLE

SCALE: 1:250



SECTION PIPE PILE BENT

SCALE: 1:250

TRESTLE DESIGN CRITERIA:

1. ASSUMED DESIGN CRANE: MANITOWOC MODEL 777 - 1555 kn LIFT CRANE
   - CRAWLER TRACK LENGTH = 7.6 m
   - CRAWLER TRACK WIDTH = 1.0 m
   - OUT TO OUT WIDTH = 6.3 m
2. CRANE ON TRESTLE (WITH BOOM, COUNTERWEIGHTS AND A 500 kn MAX. HOIST LOAD) = 1820 kn

THE INFORMATION SHOWN ON THIS DRAWING, INCLUDING (AS APPLICABLE) SIZES OF MEMBERS, THE SEQUENCE OF CONSTRUCTION, AND ERECTION PROCEDURES CONVEYS THE ASSUMPTIONS MADE BY THE DESIGNER IN DESIGNING THE STRUCTURE, AND IS FOR INFORMATIONAL USE ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SELECTING THE MEANS AND METHODS FOR CONSTRUCTION. THE CONTRACTOR SHALL ALSO SUBMIT INFORMATION INCLUDING DESIGN CALCULATIONS, CONSTRUCTION SCHEMATICS, AND CONSTRUCTION SEQUENCES AND PROCEDURES TO THE ENGINEER FOR REVIEW.

STATE OF CONNECTICUT - DEPARTMENT OF TRANSPORTATION

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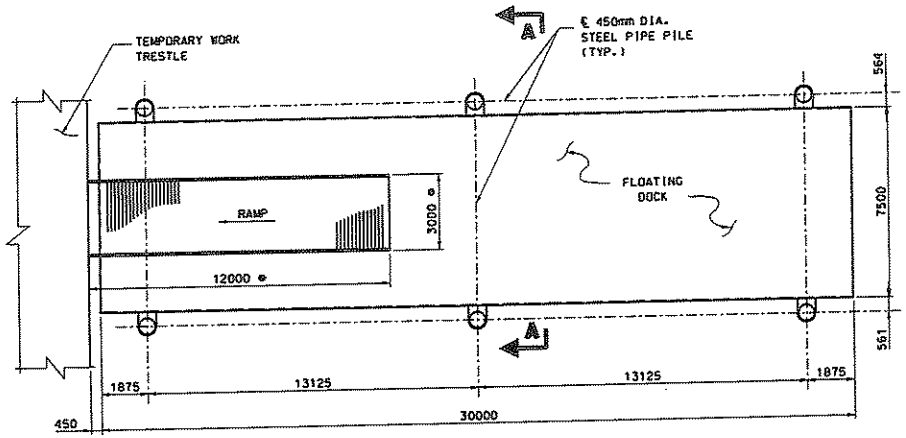
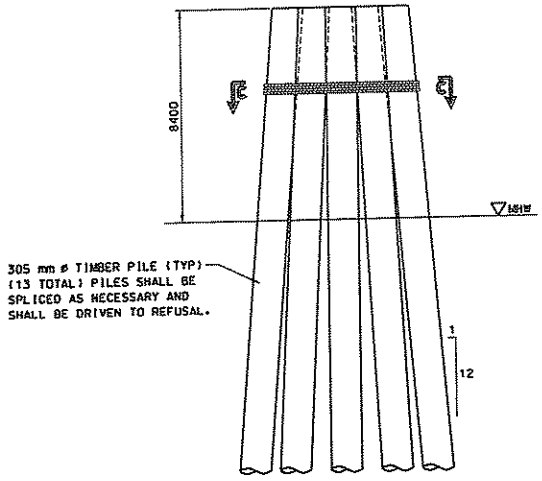
RECONSTRUCTION OF I-95 OVER WEST RIVER
NEW HAVEN-WEST HAVEN

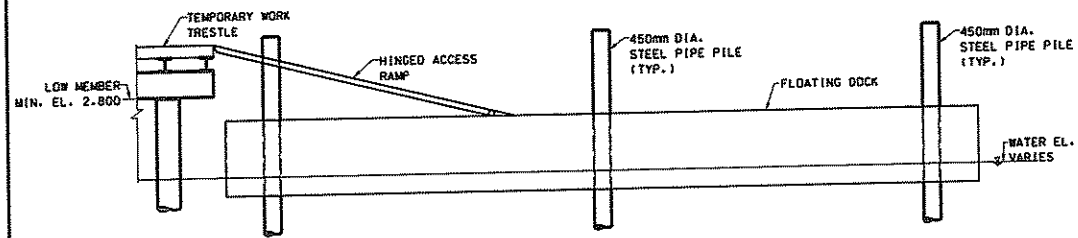
FIG. NO.	IMPACT AREA TW-5 & TW-6 PROPOSED TRESTLE DETAILS-1	6/08
38		



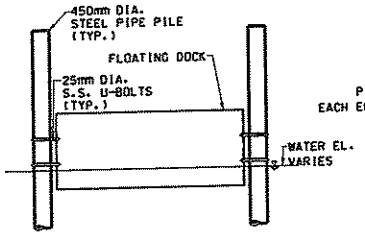
PLAN



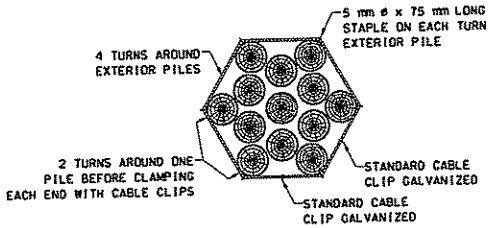
ELEVATION



SECTION B-B



SECTION A-A

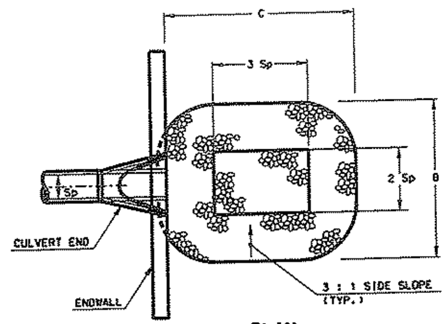


SECTION C-C

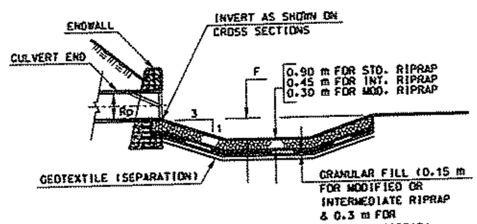
MOORING DETAILS

FLOATING RAMP DETAILS

STATE OF CONNECTICUT - DEPARTMENT OF TRANSPORTATION		
STATE PROJECT NO. 92-522		
RECONSTRUCTION OF I-95 OVER WEST RIVER NEW HAVEN-WEST HAVEN		
FIG. NO. 39	IMPACT AREA TW-5 & TW-6 PROPOSED TRESTLE DETAILS-2	6/08



PLAN

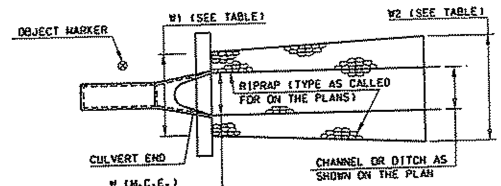


ELEVATION

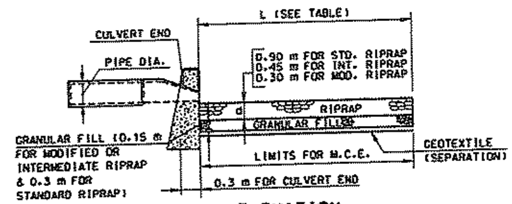
PREFORMED SCOUR HOLE TYPE I DETAIL

PREFORMED SCOUR HOLE DIMENSION TABLE						
℄ LOCATION	RIPRAP TYPE	B (METERS)	C (METERS)	2Sp (METERS)	3Sp (METERS)	F (METERS)
RAMP B STA. 20+143 14.6 m LT.	MODIFIED	1.5	1.8	0.6	0.9	0.2
ELLA T. GRASSO BLVD. STA. 10+359 19.4 m RT. ELLA T. GRASSO BLVD. STA. 10+361 22.5 m RT.	MODIFIED	4.6	5.5	1.8	2.7	0.5
ELLA T. GRASSO BLVD. STA. 10+267 95.6 m RT.	MODIFIED	6.1	7.3	2.4	3.6	0.6
I-95 STA. 1+900 66.8 m RT.	MODIFIED	4.6	5.5	1.8	2.7	0.5

DRAINAGE DETAILS



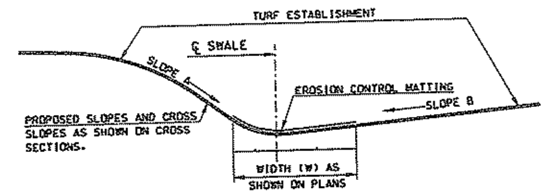
PLAN



ELEVATION

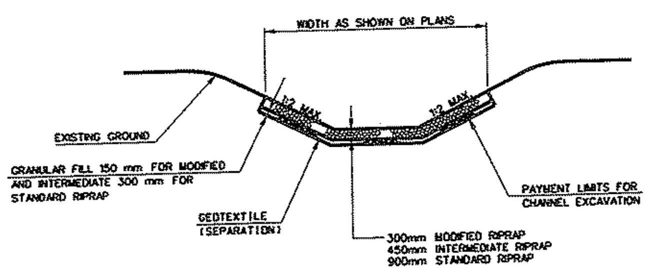
TYPE A & B RIPRAP APRON DETAIL

TYPE A & B RIPRAP APRON DIMENSION TABLE					
		TYPE B RIPRAP APRON			
℄ LOCATION	RIPRAP TYPE	L (METERS)	W1 (METERS)	W2 (METERS)	d (METERS)
I-95 STA. 0+529 41.4 m LT.	MODIFIED	3.0	1.2	2.4	0.30
I-95 STA. 0+631 46.9 m LT.	MODIFIED	3.0	1.2	2.4	0.30
I-95 STA. 0+737 45.0 m LT.	MODIFIED	3.6	1.5	3.0	0.30
I-95 STA. 1+180 30.2 m RT.	MODIFIED	4.5	1.8	3.6	0.30
RAMP A STA. 10+224 5.0 m LT.	MODIFIED	3.0	0.9	2.1	0.30
ELLA T. GRASSO BLVD. STA. 10+044 40.8 m RT.	MODIFIED	4.8	1.8	3.9	0.30



SLOPE A	SLOPE B	A	B
1:6	1:2	$\left(\frac{6}{6+2}\right)W$	$\left(\frac{2}{6+2}\right)W$
1:6	1:6	$\left(\frac{6}{6+6}\right)W$	$\left(\frac{6}{6+6}\right)W$
1:12	1:4	$\left(\frac{12}{12+4}\right)W$	$\left(\frac{4}{12+4}\right)W$
1:4	1:4	$\left(\frac{4}{4+4}\right)W$	$\left(\frac{4}{4+4}\right)W$

TYPICAL GRASS SWALE WITH EROSION CONTROL MATTING



TYPICAL RIPRAP SWALE

STATE OF CONNECTICUT - DEPARTMENT OF TRANSPORTATION		
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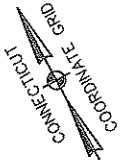
RECONSTRUCTION OF I-95 OVER WEST RIVER NEW HAVEN-WEST HAVEN		
FIG. NO. 40	MISCELLANEOUS DRAINAGE DETAILS	6/08



NOTES:

1. NOT ALL OF THE STAGING AREAS WILL BE AVAILABLE AT ONE TIME (SEE MAINTENANCE AND PROTECTION OF TRAFFIC PLANS).
2. THE CONTRACTOR SHALL PROVIDE AN EMERGENCY FLOOD PROOF PLAN FOR STAGING AREAS LOCATED WITHIN THE 100 YEAR FLOODPLAIN.

LIMIT OF CONSTRUCTION
STA. 1+900
MATCH EXISTING PAVEMENT

LIMIT OF CONSTRUCTION
STA. 0+480
MATCH EXISTING PAVEMENT

POTENTIAL STAGING AREA (TYP.)

7.6M (25') BUFFER FROM WETLAND (TYP.)

KIMBERLY AVE

RAMP B

RAMP A

I-95 SOUTHBOUND

I-95 NORTHBOUND

DOT MAINTENANCE FACILITY

SEA STREET

HOWARD AVE

WEST RIVER

ELLA GRASS BLVD

NEW HAVEN WEST HAVEN

100 YEAR FLOOD BOUNDARY (TYP)

SCALE IN METERS
0 50 100 150 200 250
SCALE 1:5000

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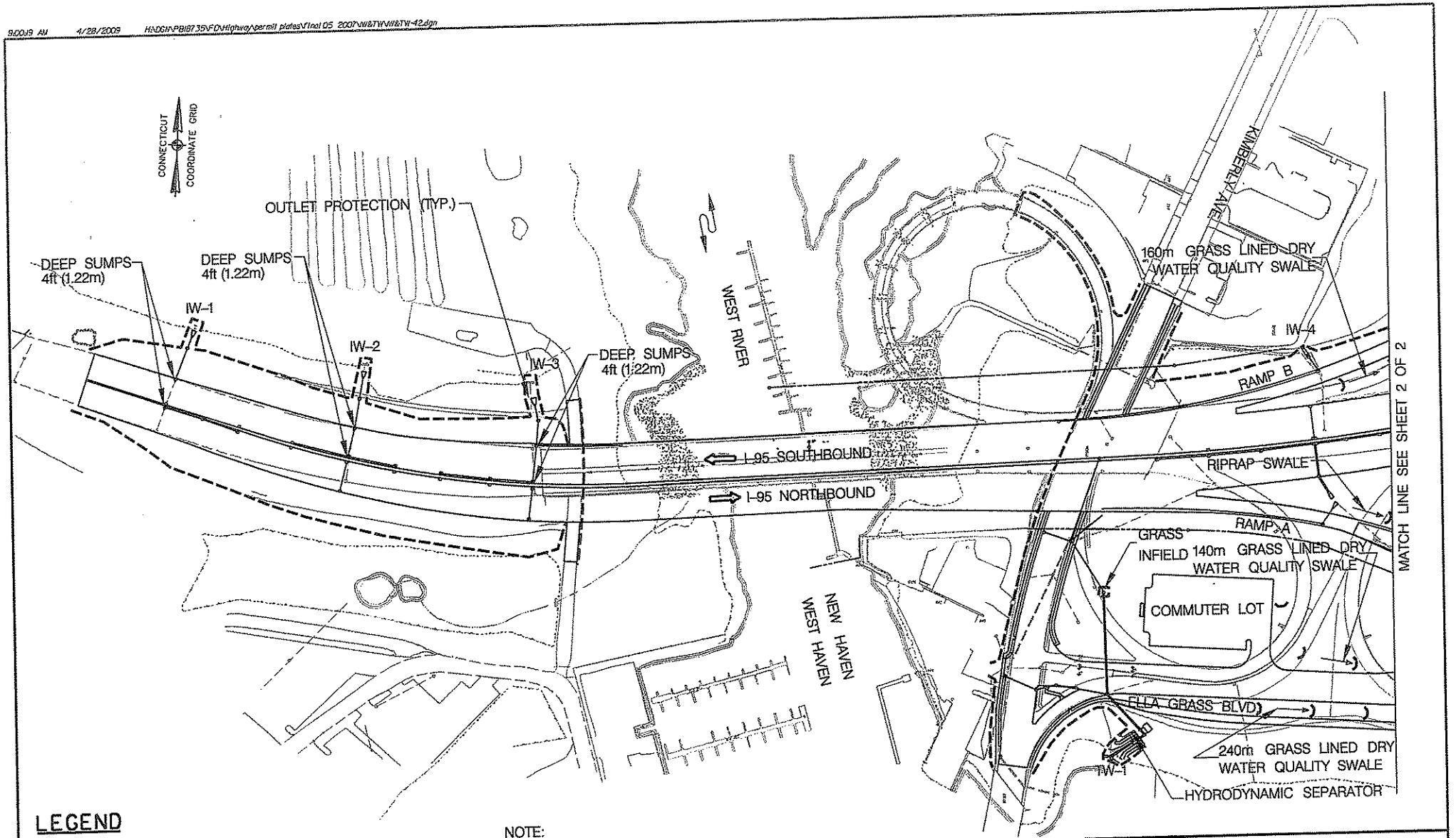
RECONSTRUCTION OF I-95 OVER WEST RIVER NEW HAVEN-WEST HAVEN		
FIG. NO. 41	POTENTIAL STAGING AREAS	6/08



LEGEND

- SEDIMENTATION CONTROL SYSTEM (S.C.S.)
- DIRECTION OF FLOW
- CHECK DAM
- APPROX. CUT OR FILL LIMIT

NOTE:
CURBING HAS BEEN ELIMINATED ALONG RAMPS A, B AND D, THE COMMUTER LOT AND ALONG I-95 ADJACENT TO THE RAMP INFIELD AREAS

SCALE IN METERS

0 30 60 90 120 150

SCALE 1:3000

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RECONSTRUCTION OF I-95 OVER WEST RIVER
NEW HAVEN-WEST HAVEN

FIG. NO.	PRETREATMENT MEASURES (1 OF 2)	6/08
42		

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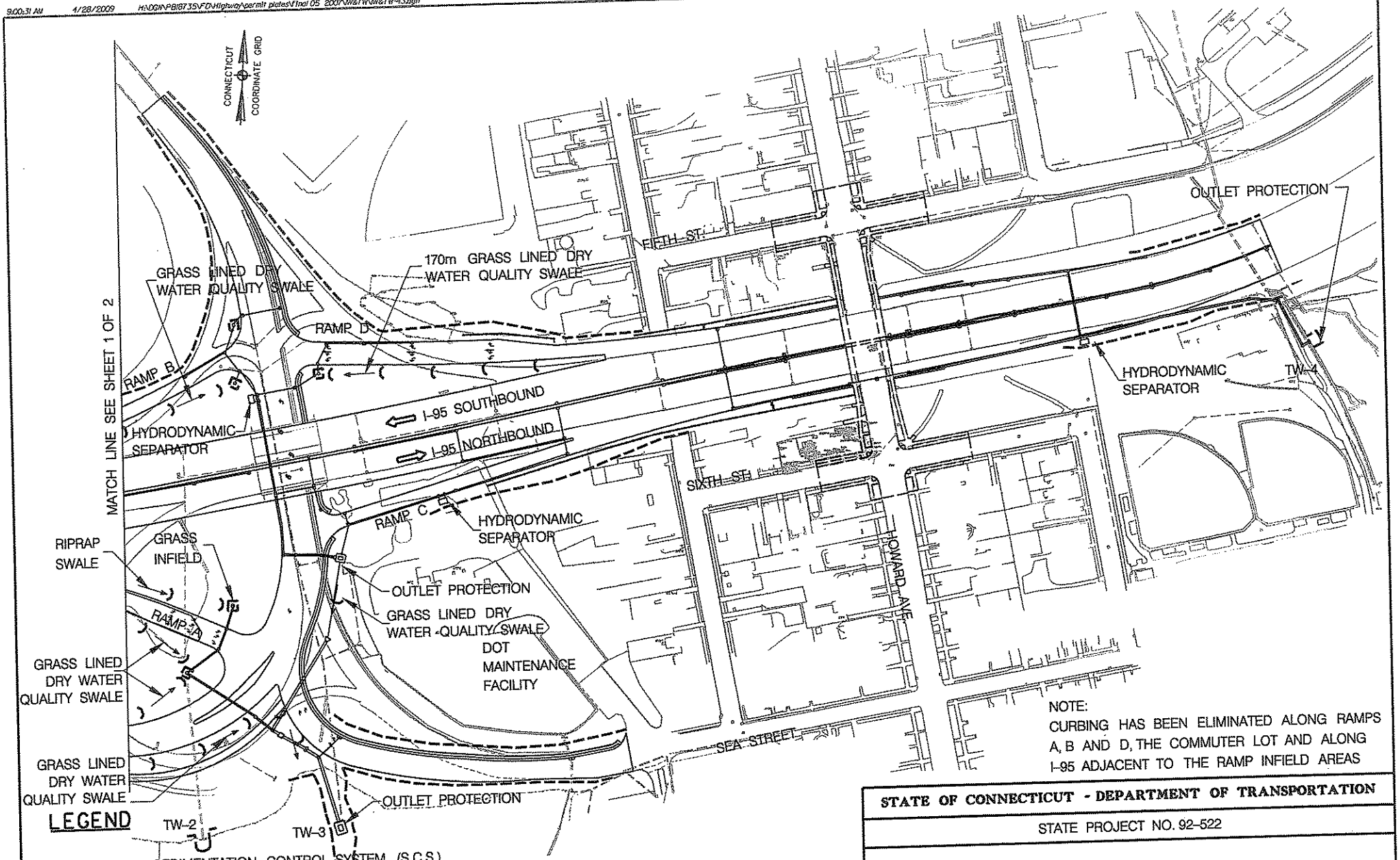

NOTE:
CURBING HAS BEEN ELIMINATED ALONG RAMPS A, B AND D, THE COMMUTER LOT AND ALONG I-95 ADJACENT TO THE RAMP INFIELD AREAS

STATE OF CONNECTICUT - DEPARTMENT OF TRANSPORTATION

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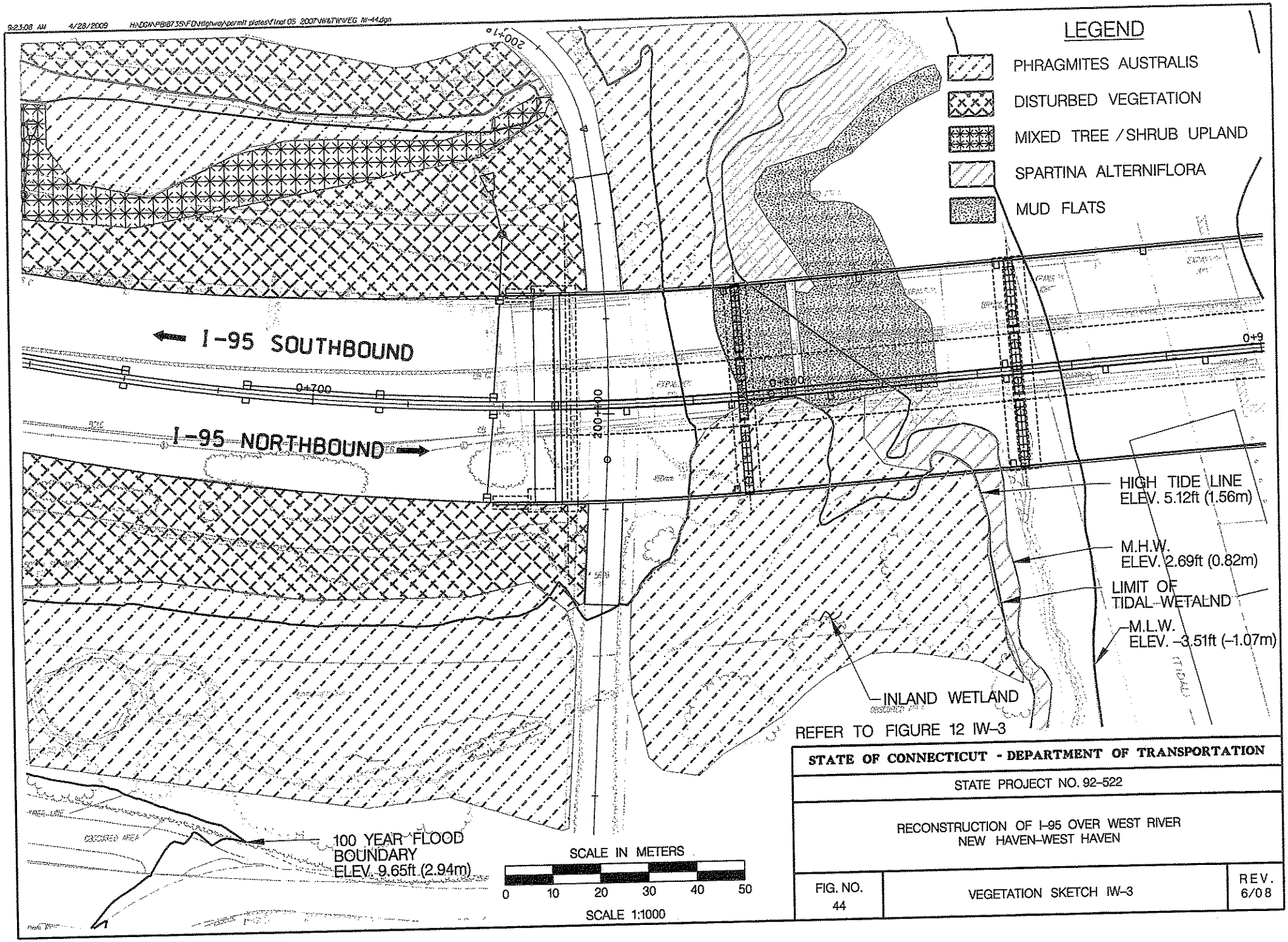
RECONSTRUCTION OF I-95 OVER WEST RIVER
NEW HAVEN-WEST HAVEN

FIG. NO. 43	PRETREATMENT MEASURES (2 OF 2)	6/08



STATE OF CONNECTICUT - DEPARTMENT OF TRANSPORTATION		
STATE PROJECT NO. 92-522		
RECONSTRUCTION OF I-95 OVER WEST RIVER NEW HAVEN-WEST HAVEN		
FIG. NO. 44	VEGETATION SKETCH IW-3	REV. 6/08

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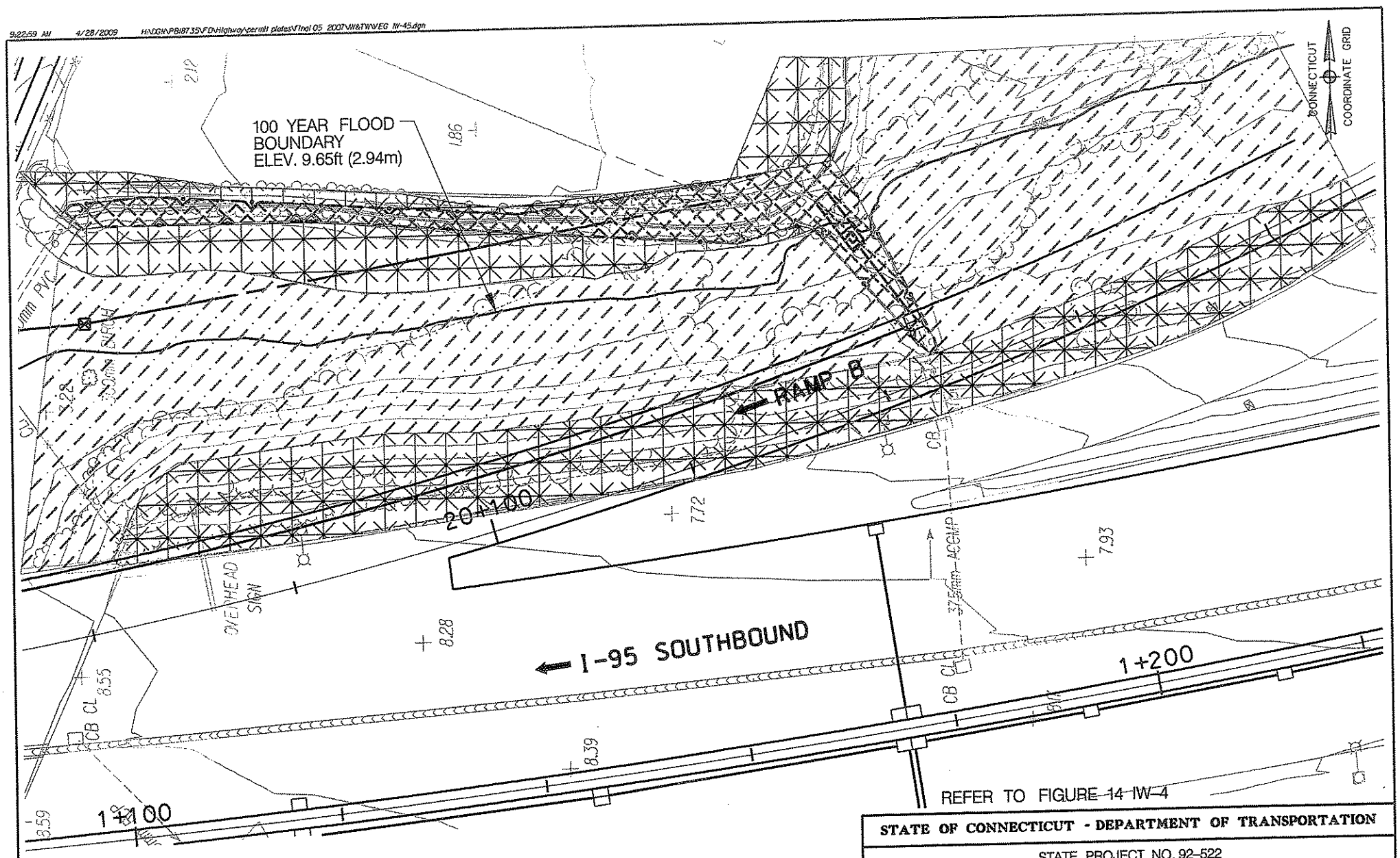

LEGEND

- PHRAGMITES AUSTRALIS
- DISTURBED VEGETATION
- MIXED TREE / SHRUB UPLAND

SCALE IN METERS

0 5 10 15 20 25

SCALE 1:500

STATE OF CONNECTICUT - DEPARTMENT OF TRANSPORTATION

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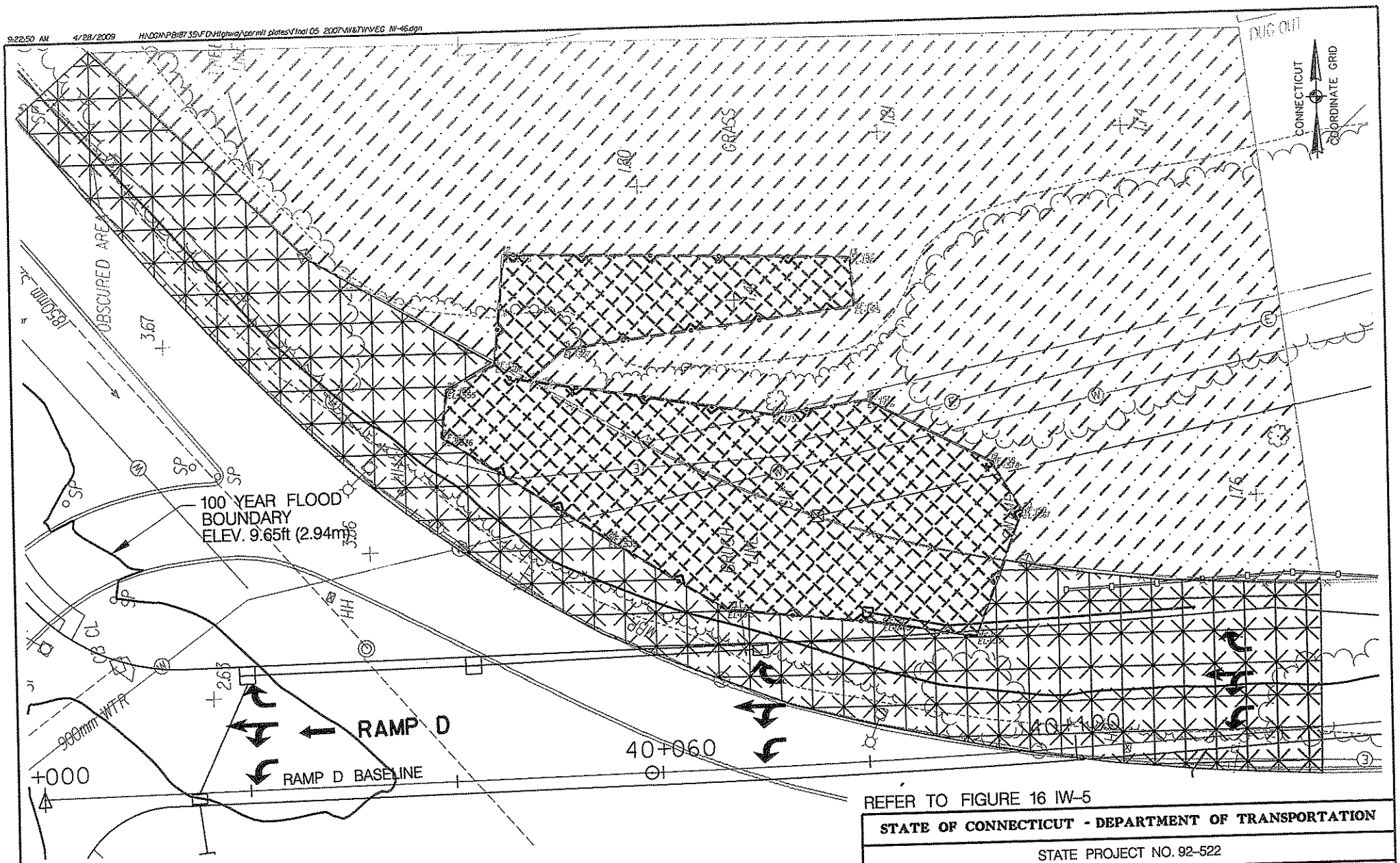
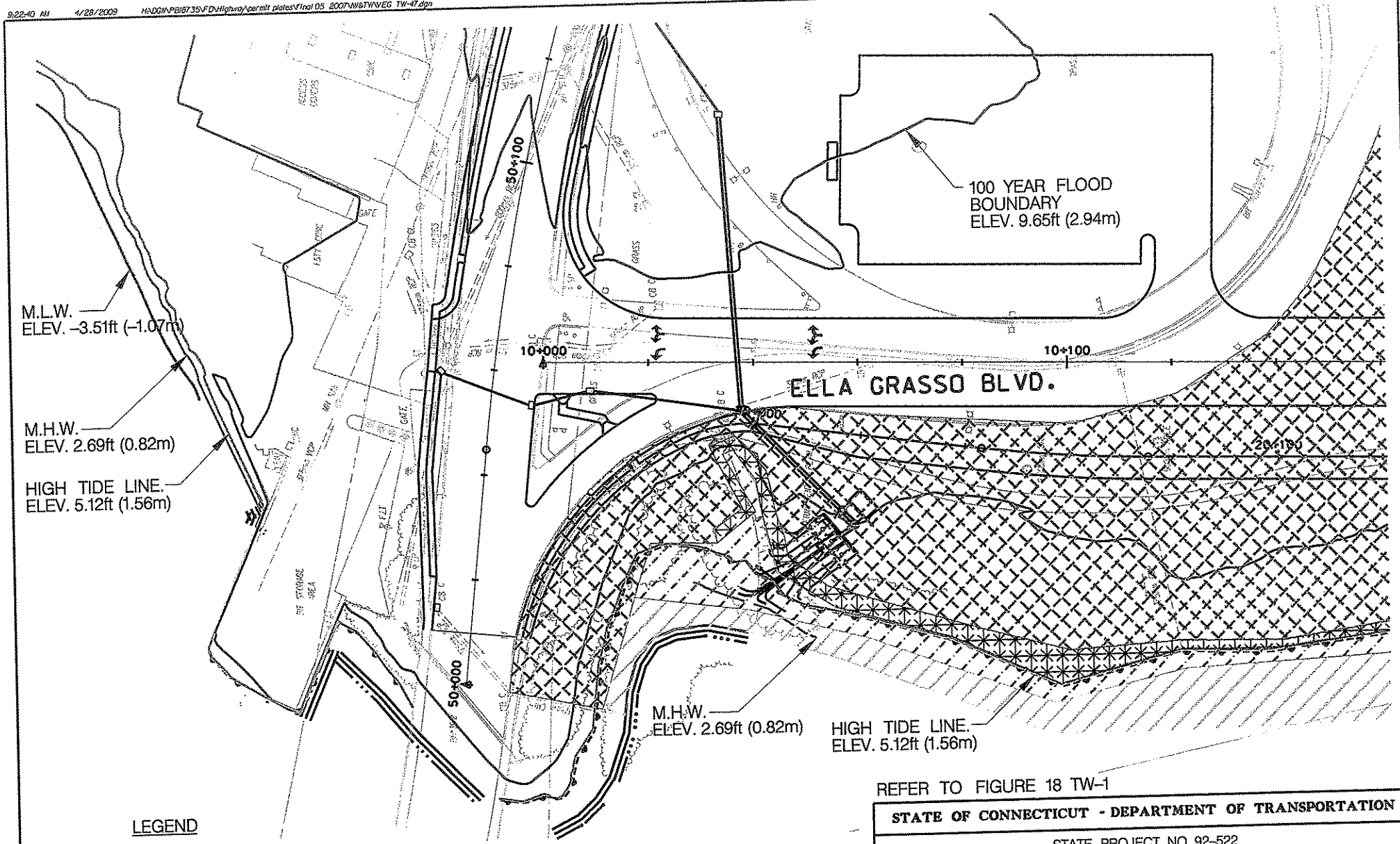
RECONSTRUCTION OF I-95 OVER WEST RIVER
NEW HAVEN-WEST HAVEN

FIG. NO.		
45	VEGETATION SKETCH IW-4	6/08



STATE OF CONNECTICUT - DEPARTMENT OF TRANSPORTATION		
STATE PROJECT NO. 92-522		
RECONSTRUCTION OF I-95 OVER WEST RIVER NEW HAVEN-WEST HAVEN		
FIG. NO. 46	VEGETATION SKETCH IW-5	6/08



REFER TO FIGURE 18 TW–1

LEGEND

- PHRAGMITES AUSTRALIS
- DISTURBED VEGETATION
- MIXED TREE / SHRUB UPLAND
- SPARTINA ALTERNIFLORA

SCALE IN METERS

0 10 20 30 40 50

SCALE 1:1000

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RECONSTRUCTION OF I–95 OVER WEST RIVER NEW HAVEN–WEST HAVEN		
FIG. NO. 47	VEGETATION SKETCH TW–1	608

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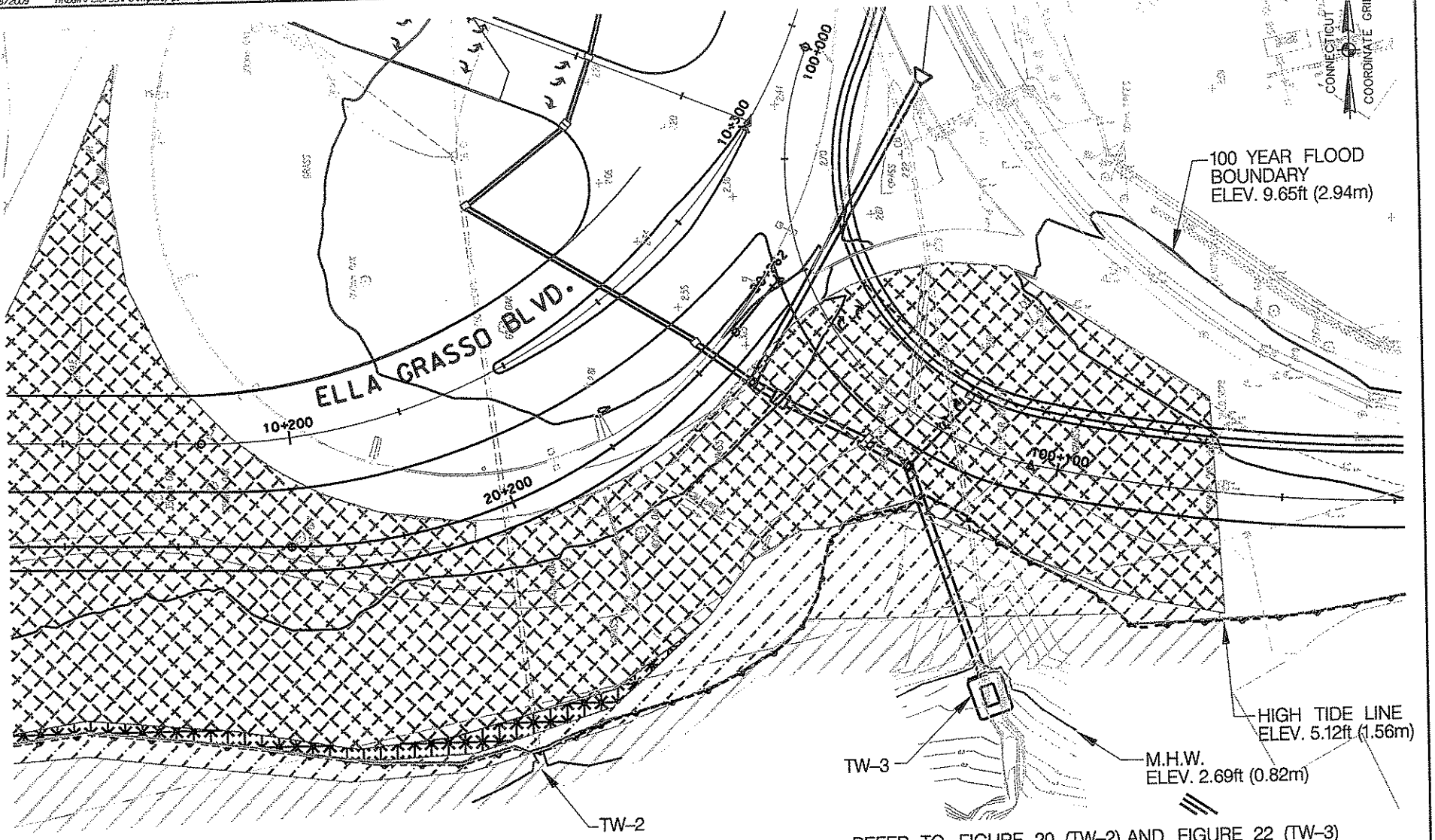


REFER TO FIGURE 20 (TW-2) AND FIGURE 22 (TW-3)

LEGEND

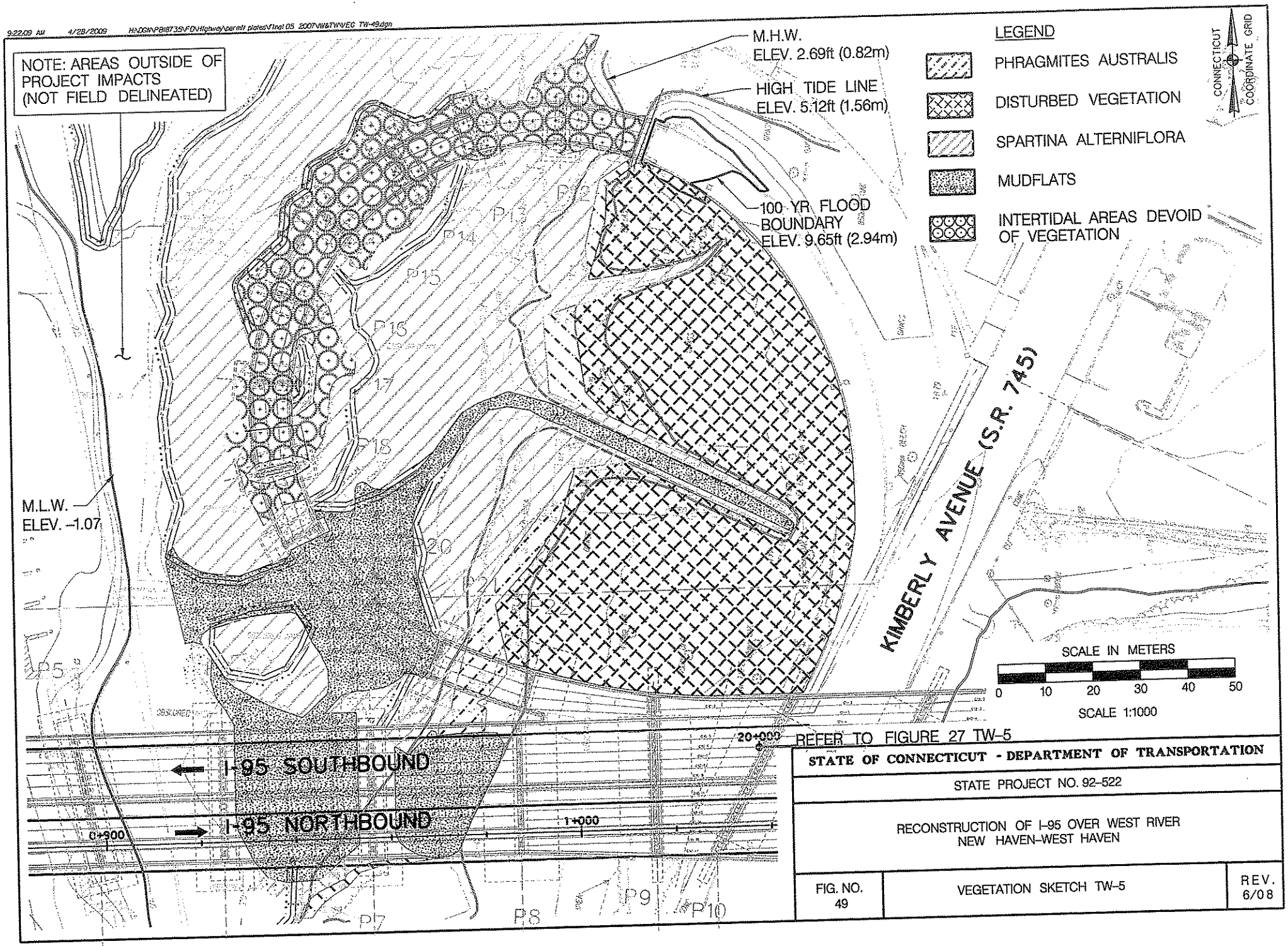
- PHRAGMITES AUSTRALIS
- DISTURBED VEGETATION
- MIXED TREE / SHRUB UPLAND
- SPARTINA ALTERNIFLORA

SCALE IN METERS

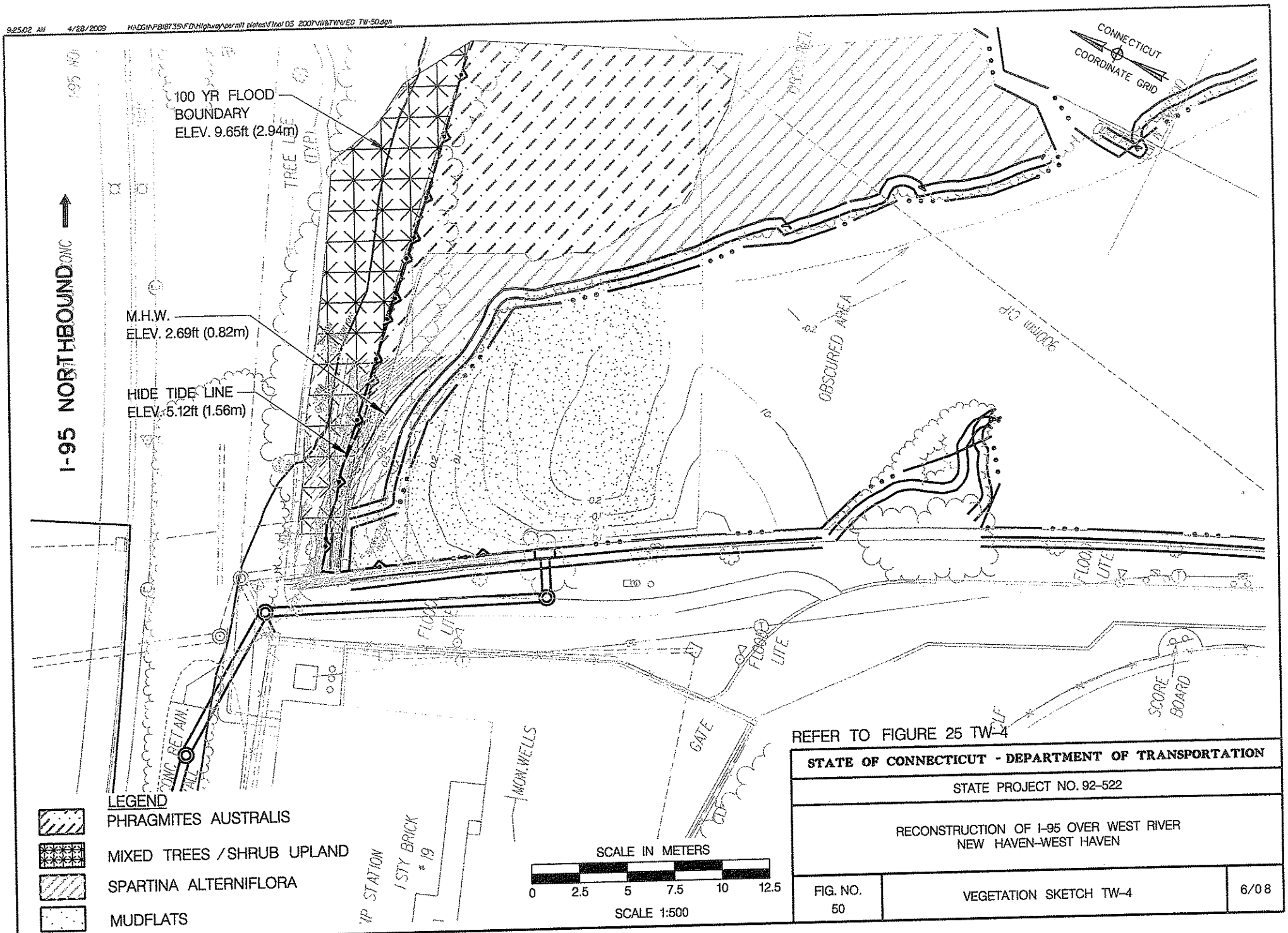
0 10 20 30 40 50

SCALE 1:1000

STATE OF CONNECTICUT - DEPARTMENT OF TRANSPORTATION		
STATE PROJECT NO. 92-522		
RECONSTRUCTION OF I-95 OVER WEST RIVER NEW HAVEN-WEST HAVEN		
FIG. NO. 48	VEGETATION SKETCH TW-2 AND TW-3	608



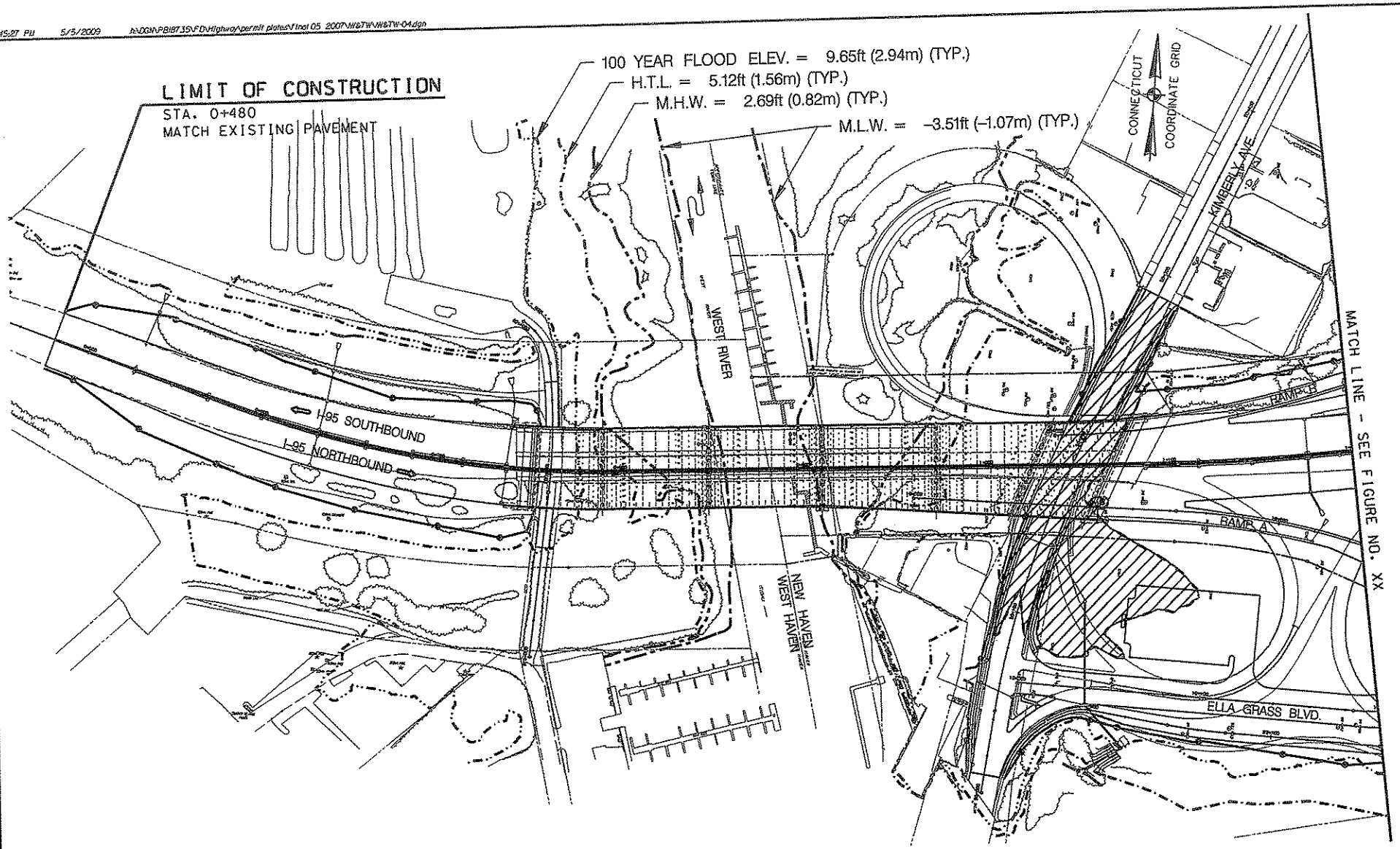
STATE OF CONNECTICUT - DEPARTMENT OF TRANSPORTATION		
STATE PROJECT NO. 92-522		
RECONSTRUCTION OF I-95 OVER WEST RIVER NEW HAVEN-WEST HAVEN		
FIG. NO. 49	VEGETATION SKETCH TW-5	REV. 6/08



REFER TO FIGURE 25 TW-4

STATE OF CONNECTICUT - DEPARTMENT OF TRANSPORTATION		
STATE PROJECT NO. 92-522		
RECONSTRUCTION OF I-95 OVER WEST RIVER NEW HAVEN-WEST HAVEN		
FIG. NO. 50	VEGETATION SKETCH TW-4	6/08

3:45:27 PM 5/5/2009 h:\DGN\PBI8735\FD\Highway\permit plates\Float 05 2007\NW&TW\NW&TW-04.dgn



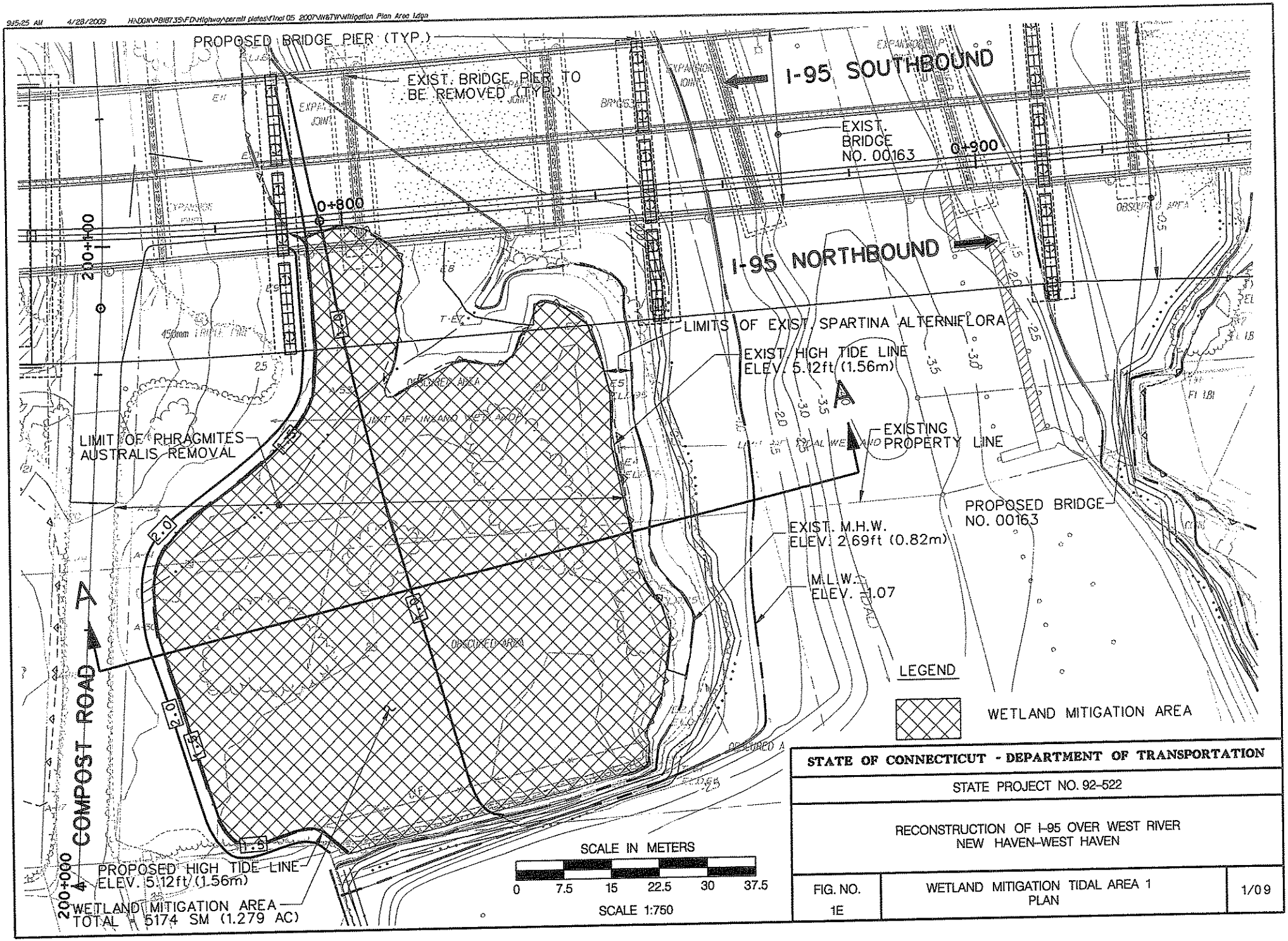
AREA OF IMPACT WITHIN 100-YR FLOODPLAIN

SCALE IN METERS

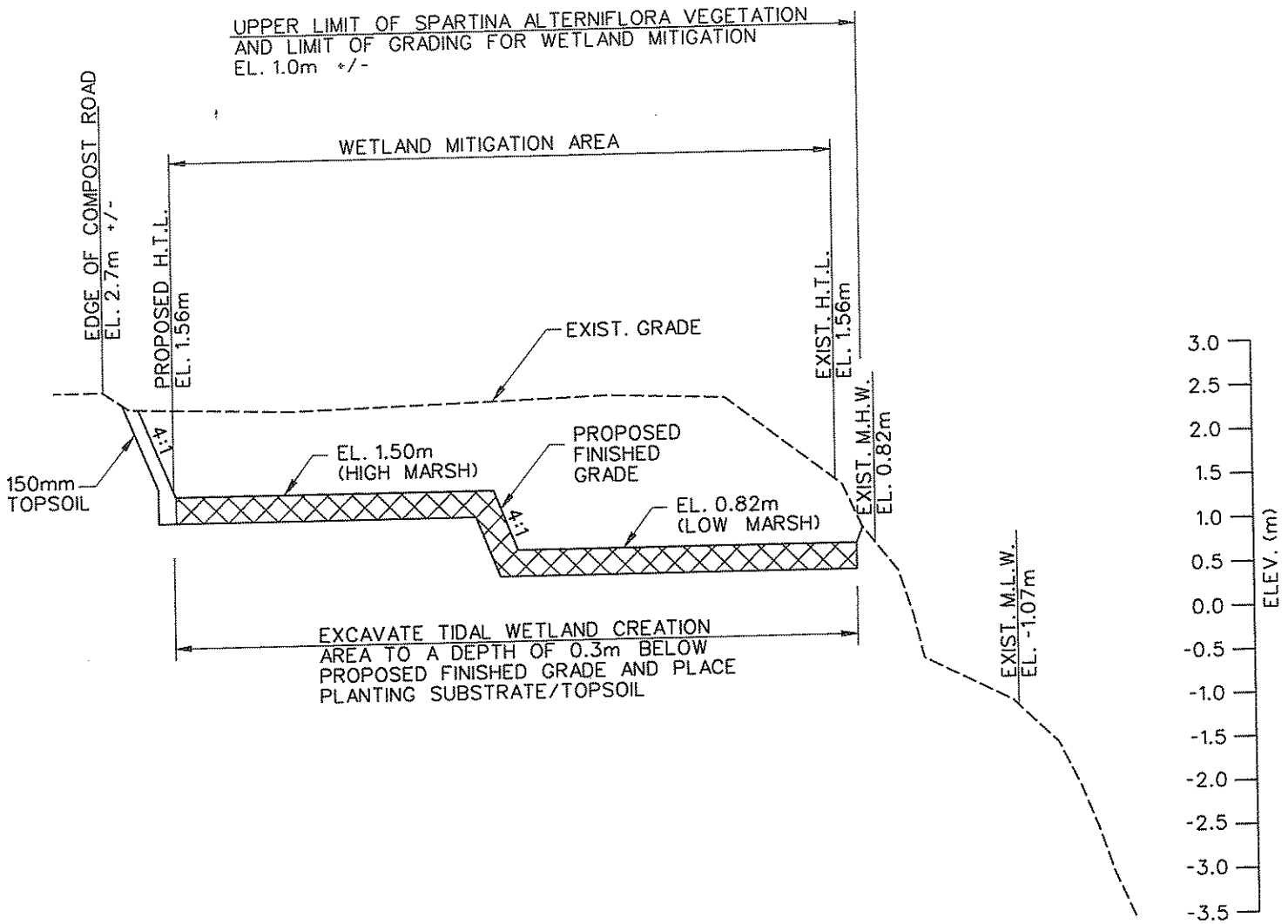
0 30 60 90 120 150

SCALE 1:3000

STATE OF CONNECTICUT - DEPARTMENT OF TRANSPORTATION		
STATE PROJECT NO. 92-522		
RECONSTRUCTION OF I-95 OVER WEST RIVER NEW HAVEN--WEST HAVEN		
FIG. NO. 4	FLOODPLAIN IMPACT AREA MAP	5/07



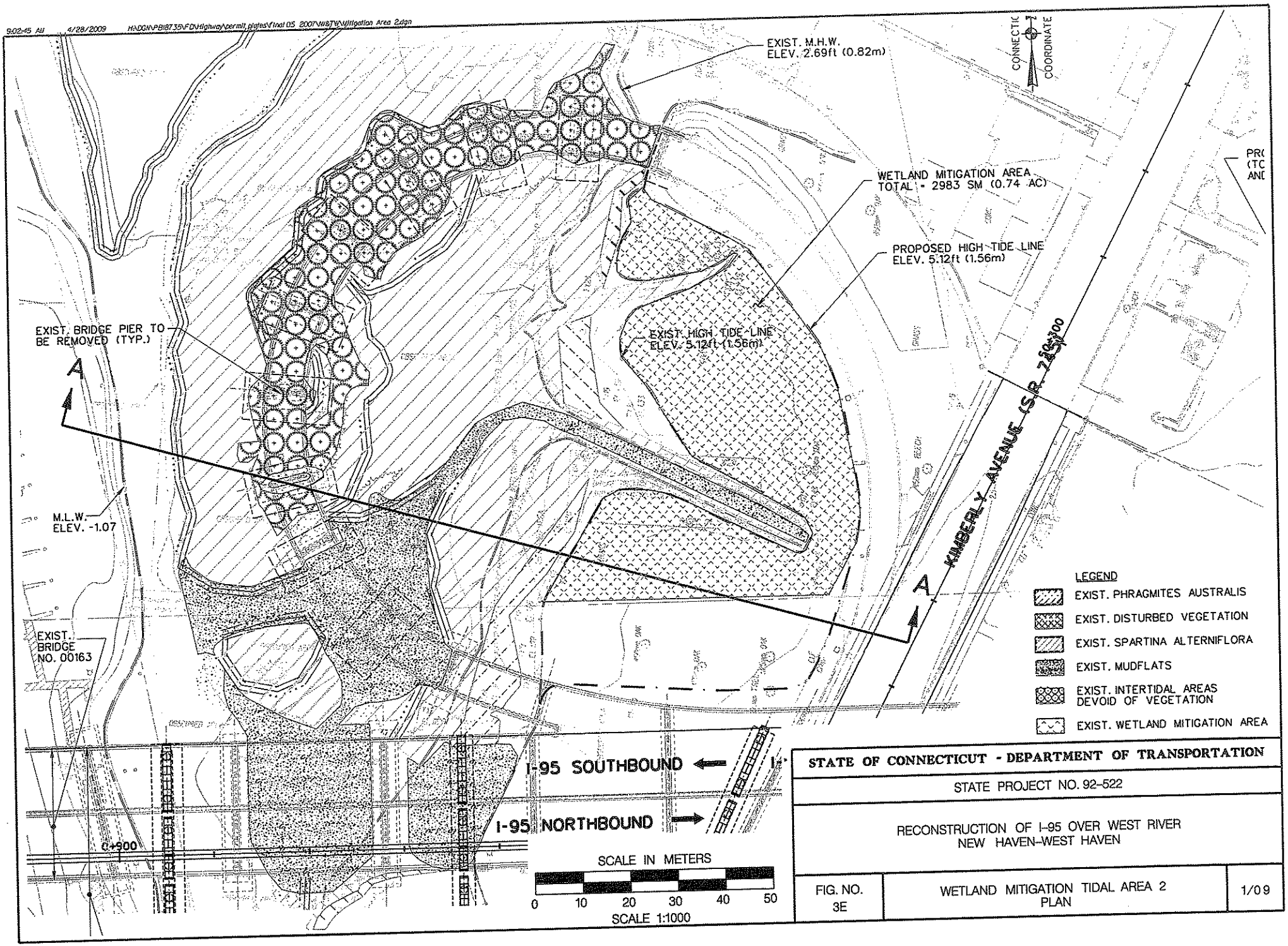
STATE OF CONNECTICUT - DEPARTMENT OF TRANSPORTATION		
STATE PROJECT NO. 92-522		
RECONSTRUCTION OF I-95 OVER WEST RIVER NEW HAVEN-WEST HAVEN		
FIG. NO. 1E	WETLAND MITIGATION TIDAL AREA 1 PLAN	1/09



SECTION A-A

SCALE: 1:750 HORIZONTAL
1:75 VERTICAL

STATE OF CONNECTICUT - DEPARTMENT OF TRANSPORTATION		
STATE PROJECT NO. 92-522		
RECONSTRUCTION OF I-95 OVER WEST RIVER NEW HAVEN-WEST HAVEN		
FIG. NO. 2E	WETLAND MITIGATION TIDAL AREA 1 SECTION	1/09

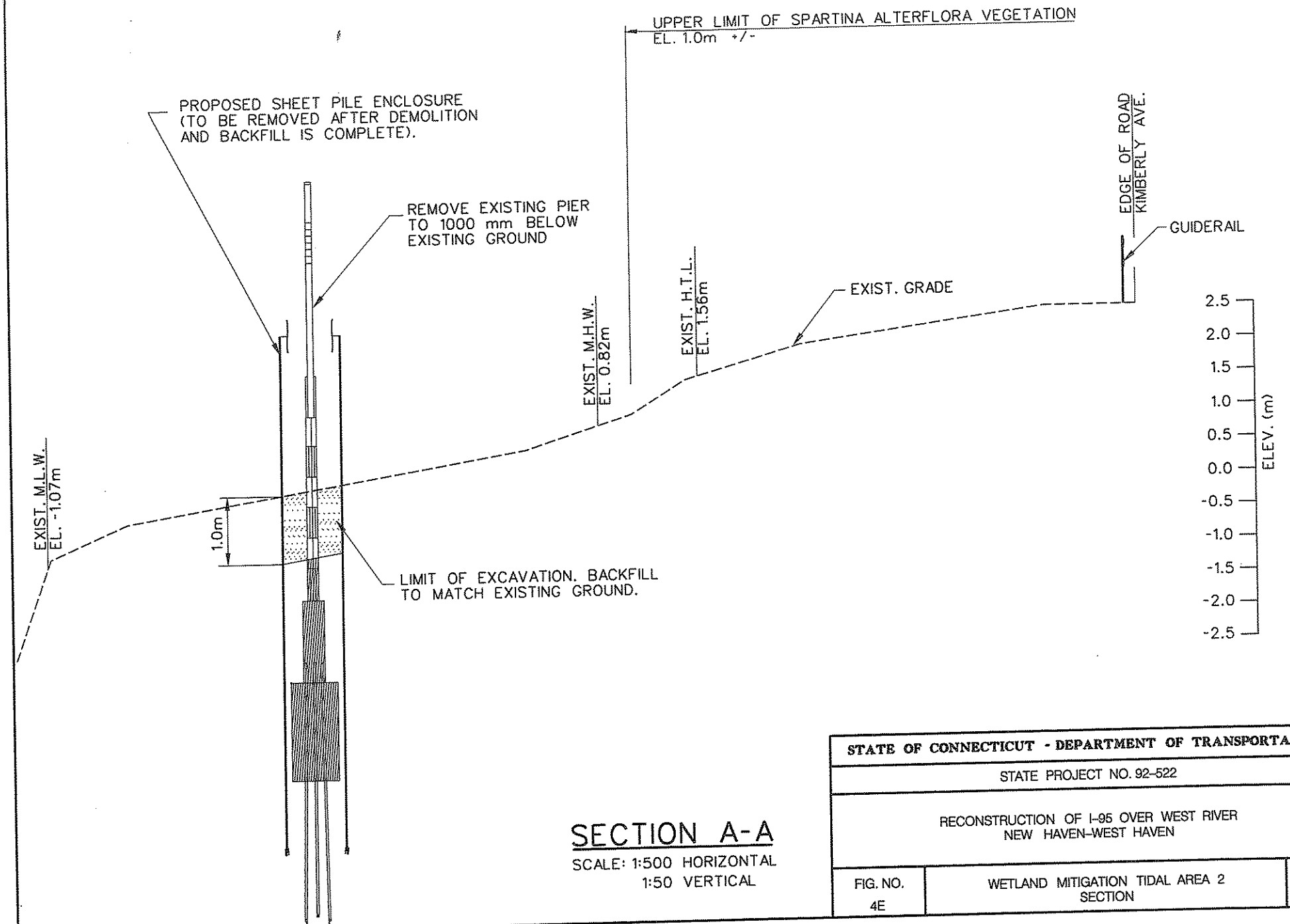


STATE OF CONNECTICUT - DEPARTMENT OF TRANSPORTATION

STATE PROJECT NO. 92-522

RECONSTRUCTION OF I-95 OVER WEST RIVER
NEW HAVEN-WEST HAVEN

FIG. NO.		
3E	WETLAND MITIGATION TIDAL AREA 2 PLAN	1/09

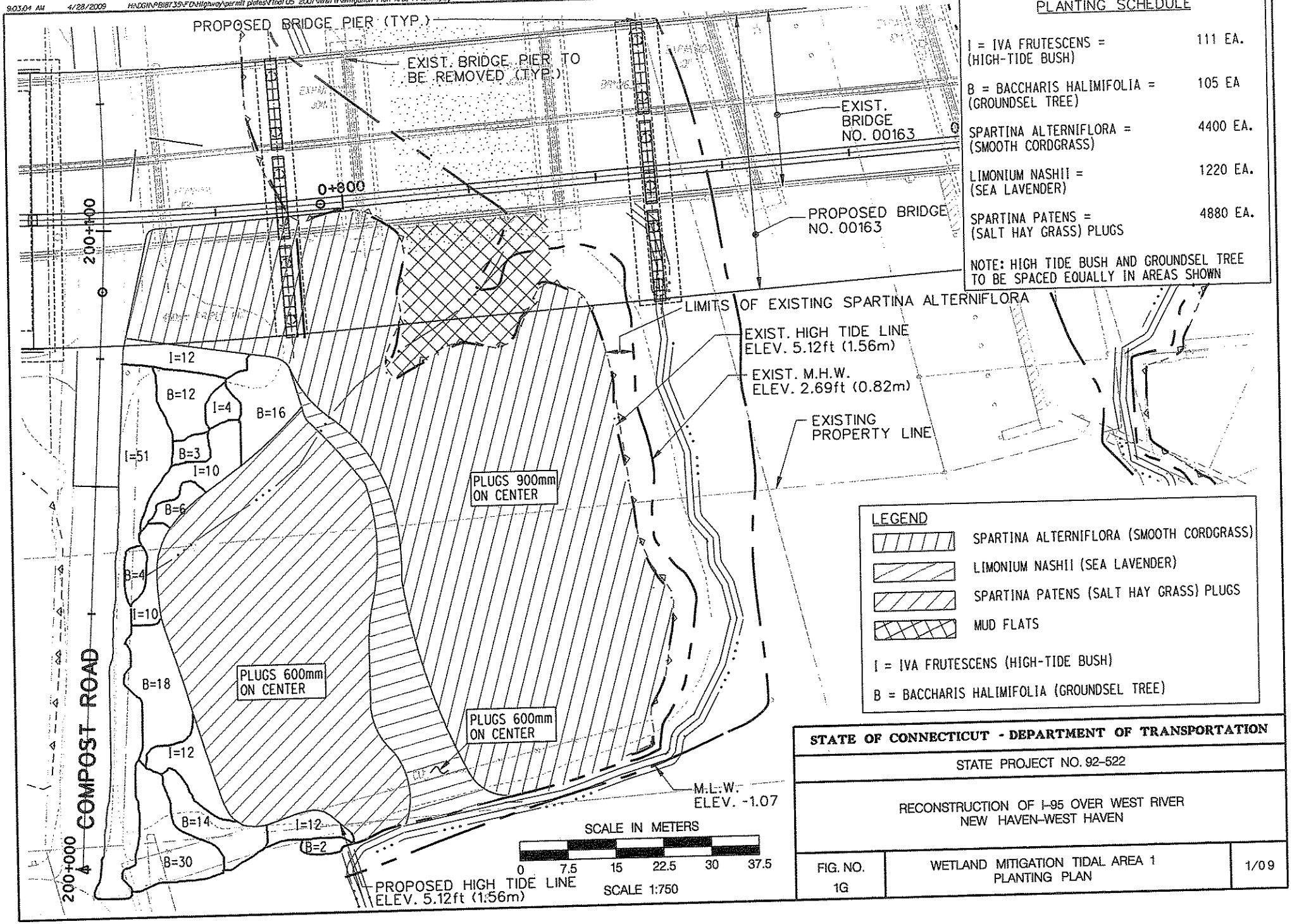


SECTION A-A

SCALE: 1:500 HORIZONTAL
1:50 VERTICAL

STATE OF CONNECTICUT - DEPARTMENT OF TRANSPORTATION		
STATE PROJECT NO. 92-522		
RECONSTRUCTION OF I-95 OVER WEST RIVER NEW HAVEN-WEST HAVEN		
FIG. NO. 4E	WETLAND MITIGATION TIDAL AREA 2 SECTION	1/09

9:03:04 AM 4/28/2009 H:\DGN\PBI8735\FD\Highway\permit plates\Tract 05_2007\WB\TW\Mitigation Plan Area 1 Planting.dgn



PLANTING SCHEDULE

I = IVA FRUTESCENS = (HIGH-TIDE BUSH)	111 EA.
B = BACCHARIS HALIMIFOLIA = (GROUNDSEL TREE)	105 EA
SPARTINA ALTERNIFLORA = (SMOOTH CORDGRASS)	4400 EA.
LIMONIUM NASHII = (SEA LAVENDER)	1220 EA.
SPARTINA PATENS = (SALT HAY GRASS) PLUGS	4880 EA.

NOTE: HIGH TIDE BUSH AND GROUNDSEL TREE TO BE SPACED EQUALLY IN AREAS SHOWN

LEGEND

- SPARTINA ALTERNIFLORA (SMOOTH CORDGRASS)
- LIMONIUM NASHII (SEA LAVENDER)
- SPARTINA PATENS (SALT HAY GRASS) PLUGS
- MUD FLATS

I = IVA FRUTESCENS (HIGH-TIDE BUSH)

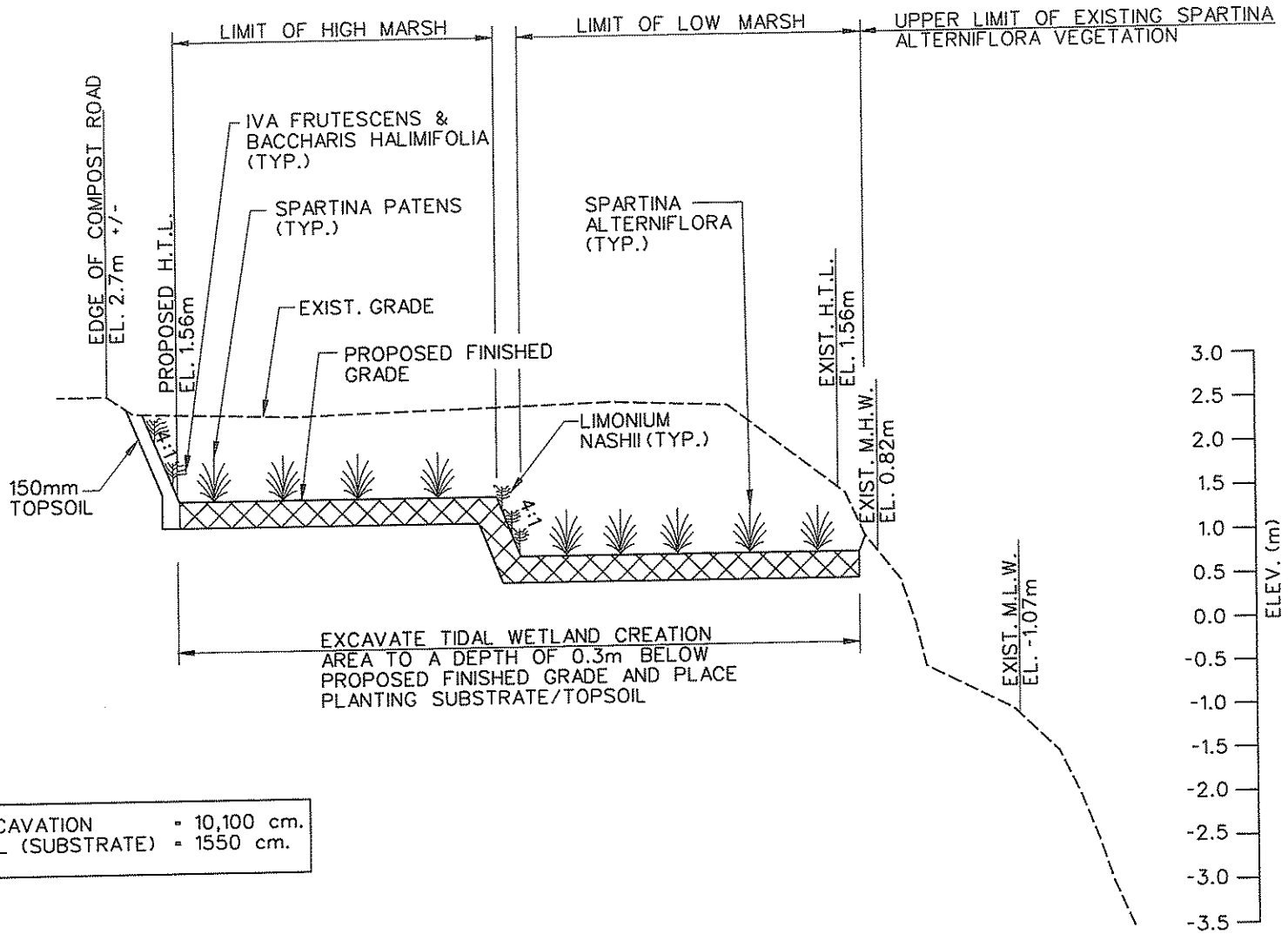
B = BACCHARIS HALIMIFOLIA (GROUNDSEL TREE)

STATE OF CONNECTICUT - DEPARTMENT OF TRANSPORTATION

STATE PROJECT NO. 92-522

RECONSTRUCTION OF I-95 OVER WEST RIVER
NEW HAVEN-WEST HAVEN

FIG. NO.		
1G	WETLAND MITIGATION TIDAL AREA 1 PLANTING PLAN	1/09



TOTAL EXCAVATION	= 10,100 cm.
TOTAL FILL (SUBSTRATE)	= 1550 cm.

SECTION A-A

SCALE: 1:750 HORIZONTAL
1:75 VERTICAL

STATE OF CONNECTICUT - DEPARTMENT OF TRANSPORTATION

STATE PROJECT NO. 92-522

RECONSTRUCTION OF I-95 OVER WEST RIVER
NEW HAVEN-WEST HAVEN

FIG. NO.		
2G	WETLAND MITIGATION TIDAL AREA 1 PLANTING SECTION	1/09

ATTACHMENT F

ITEM #0944105A – STRUCTURAL SOIL

Description:

This item is part of a mudline restoration around proposed and demolished piers. The mudline restoration shall include the furnishing, and placing of suitable backfill materials at proposed piers 1 through 5, demolished piers 1 through 22 and the demolished ramp abutment.

Materials:

1-Granular Backfill Material: Granular backfill material, specified herein or as indicated on the plans, shall conform to the requirements of Article M.02.13. In addition to meeting the requirements of Article M.02.01 the granular backfill material shall also have a minimum specific gravity of 1.90.

2-Structural Soil:

Prior to the demolition of the existing piers and the construction of the proposed piers, the Contractor shall take a soil sample in the area of each proposed pier and adjacent to each existing pier to identify sediment grain size data and sediment description that characterizes the top 1.0 meter layer of bottom sediment material.

Proposed piers 2 & 3 and existing piers 4 & 5:

The structural soil specified herein shall meet the soil textural classes established by the USDA Classification System based upon the proportion of sand, silt, and clay size particles after passing a 2 millimeter sieve and subjected to a particle size analysis and closely match the characteristics of the soil sample taken prior to construction.. The structural soil shall not contain less than 6% nor more than 20% organic matter as determined by loss on ignition of oven-dried samples dried at 105° C.

The following textural classes shall be acceptable:

Sandy loam, including coarse, fine and very fine sandy loam
Loam

The structural soil to be furnished by the Contractor shall be loose and friable and free from refuse, stumps, roots, brush, weeds, rocks and stones over 30 millimeters in diameter.

The Contractor shall notify the Engineer of the location from which he proposes to furnish structural soil to the project at least 15 calendar days prior to delivery.

The structural soil and its source shall be inspected and approved by the Engineer before the material is delivered to the project. Any material delivered to the project, which does not meet specifications or which has become mixed with undue amounts of objectionable material during any operation at the source or during placing and spreading, will be rejected and shall be replaced by the Contractor with acceptable material.

Proposed piers 1 & 4 and existing piers 2, 3, 6, 7, 12 through 21 and the existing ramp abutment:

Natural or manmade planting substrate or topsoil may be used, which shall match the pre-construction soil sample and consist of soils containing ***no less than*** 75% sand by weight and an organic content no less than 10% and no more than 15%. The soil must be analyzed by USDA-approved methodology for organic matter by loss-on-ignition of oven-dried samples dried at 105 degrees centigrade. The mineral fraction must be analyzed to determine weight percentage of sand, as determined after passing a 2-millimeter (mm) sieve. Sand particles are defined to be between 0.05 and 2.0 mm in diameter. The topsoil must be free of seeds and roots of invasive species and inspected and approved by the Connecticut Department of Transportation Office of Environmental Planning (CT DOT OEP) prior to its application.

Topsoil not furnished by the Contractor shall be natural topsoil material stripped from earth excavation areas within the project limits, or stripped and stockpiled from the Wetland Mitigation Area, if it meets the criteria described above. If these soils do not meet the criteria, additional make-up material from off-site areas may be substituted or mixed with the on-site project material provided the resultant soil composition meets the applicable criteria. Clean leaf compost is the preferred soil amendment to achieve these criteria. If other soil amendments are more readily available than clean leaf compost they can be used to meet the requirement for organic content.

If soil must be supplemented with organic material, the following sources are acceptable:

a) Natural Wetland Soil: The top layer of natural wetland soil excavated from within the project limits or from another wetland source. The bottom of this layer shall be defined as the depth at which the soil color and texture changes, indication the beginning of the subsoil. Each source must be inspected at least 6 months prior to excavation and determined by the CT DOT OEP to be free from seeds and roots of invasive species.

b) Compost: Compost shall meet the requirements of Subarticle M.13.06 - Compost.

Proposed pier 5 and existing piers 1, 8 to 11 & 22:

No structural soil required.

Construction Methods:

Granular Backfill Material and Structural Soil shall be placed to the limits indicated on the plans or as specified herein. The Granular Backfill Material shall be placed to within one meter of the existing mudline. The Structural Soil shall be placed in the final one meter depth to match the existing mudline and shall be level as close as practical.

Granular Backfill Material and Structural Soil shall be placed in the wet within the cofferdam or the temporary sheet piling enclosures, as indicated on the plans.

The Granular Backfill Material and Structural Soil may be placed in layers or in total and need not be compacted.

At proposed pier 5 and existing piers 1, 8 to 11 & 22, the backfill shall consist of only Granular Backfill Material.

Method of Measurement:

Structural Soil shall be measured as the volume of backfill material, either Granular Backfill Material or Structural Soil, placed and accepted at Proposed Piers 1 to 5.

Basis of Payment:

Structural Soil shall be paid for the contract unit price per cubic meter for "Structural Soil" complete in place, including all equipment, tools and labor incidental to placing of structural soil and completion of the mudline restoration.

Pay Item	Pay Unit
Structural Soil	cu. m

There will be no direct payment for backfilling of the existing piers and ramp abutment, but it shall be included under the Item "Removal of Piers _" and "Removal of Ramp Abutment".

ASSESSMENT PLAN

A post-construction assessment of the condition of the mitigation site(s) shall be performed following the fifth growing season after completion of the mitigation site(s) construction, or by the end of the monitoring period, whichever is later. "Growing season" in this context begins no later than May 31st. To ensure objectivity, the person(s) who prepared the annual monitoring reports shall not perform this assessment without written approval from the Corps. The assessment report shall be submitted to the Corps by December 15 of the year the assessment is conducted; this will coincide with the year of the final monitoring report, so it is acceptable to include both the final monitoring report and assessment in the same document.

The post-construction assessment shall include the four assessment appendices listed below and shall:

- Summarize the original or modified mitigation goals and discuss the level of attainment of these goals at each mitigation site.
- Describe significant problems and solutions during construction and maintenance (monitoring) of the mitigation site(s).
- Identify agency procedures or policies that encumbered implementation of the mitigation plan. Specifically note procedures or policies that contributed to less success or less effectiveness than anticipated in the mitigation plan.
- Recommend measures to improve the efficiency, reduce the cost, or improve the effectiveness of similar projects in the future.

ASSESSMENT APPENDICES:

Appendix A -- Summary of the results of a functions and values assessment of the mitigation site(s), using the same methodology used to determine the functions and values of the impacted wetlands.

Appendix B -- Calculation of the area of wetlands in each mitigation site using the 1987 Corps Wetlands Delineation Manual and approved regional supplements. Supporting documents shall include (1) a scaled drawing showing the wetland boundaries and representative transects and (2) datasheets for corresponding data points along each transect.

Appendix C -- Comparison of the area and extent of delineated constructed wetlands (from Appendix B) with the area and extent of created wetlands proposed in the mitigation plan. This comparison shall be made on a scaled drawing or as an overlay on the as-built plan. This plan shall also show the major vegetation community types.

Appendix D -- Photos of each mitigation site taken from the same locations as the monitoring photos, including photos of vernal pools, if applicable.

MONITORING

Notification of Construction Completion

Within 60 days of completing a mitigation project that includes restoration, creation, and/or enhancement, the applicant will submit a signed letter to the Corps, Policy Analysis and Technical Support Branch, specifying the date of completion of the mitigation work.

If mitigation construction is initiated in, or continues throughout the year, but is not completed by December 31 of any given year, the permittee will provide the Corps, Policy Analysis and Technical Support Branch, a letter providing the date mitigation work began and the work completed as of December 31. The letter will be sent no later than January 31 of the next year. The letter will include the Corps permit number.

Monitoring Report Guidance

For each of the first **five** full growing seasons following construction of the mitigation site(s), the site(s) will be monitored and annual monitoring reports submitted **for growing years 2 and 3**. Observations will occur at least two times during the growing season – in late spring/early summer and again in late summer/early fall. Each monitoring report will be submitted to the Corps, Regulatory Division, Policy Analysis and Technical Support Branch, no later than December 15 of the year being monitored. Failure to perform the monitoring and submit monitoring reports constitutes permit non-compliance. **A self-certification form[1] will be completed, and signed as the transmittal coversheet for each annual monitoring report and will indicate the permit number and the report number (Monitoring Report 1 of 5, for example).** The reports will address the following success-standards in the summary data section and will address the additional items noted in the monitoring report requirements, in the appropriate section. The reports will also include the monitoring-report appendices listed below. The first year of monitoring will be the first year that the site has been through a full growing season after completion of construction and planting. For these special conditions, a growing season starts no later than May 31. However, if there are problems that need to be addressed and if the measures to correct them require prior approval from the Corps, the permittee will contact the Corps by phone (1-800-362-4367 in MA or 1-800-343-4789 in ME, VT, NH, CT, RI) or letter as soon as the need for corrective action is discovered.

---

[1] See Attachment 2

- Highlighted summary of problems which need immediate attention (e.g., problem with hydrology, severe invasives problem, serious erosion, major losses from herbivory, etc.). This should be at the beginning of the report and highlighted in the project overview and in the self-certification form.

Requirements

- A copy of this permit's mitigation special conditions and summary of the mitigation goals.

Summary Data

- Address success standards achievement and/or measures to attain the standards.

- Describe the monitoring inspections, and provide their dates, that occurred since the last report.

- Soils data, commensurate with the requirements of the soils portion of the 1987 Corps Wetlands Delineation Manual (Technical Report Y-87-1 and approved regional supplements) New England District data form, should be collected after construction and every alternate year throughout the monitoring period. If monitoring wells or gauges were installed as part of the project, this hydrology data should be submitted annually.

- Concisely describe remedial actions done during the monitoring year to meet the five success standards – actions such as removing debris, replanting, controlling invasive plant species (with biological, herbicidal, or mechanical methods), regrading the site, applying additional topsoil or soil amendments, adjusting site hydrology, etc. Also describe any other remedial actions done at each site.

- Report the status of all erosion control measures on the compensation site(s). Are they in place and functioning? If temporary measures are no longer needed, have they been removed?

- Give visual estimates of (1) percent vegetative cover for each mitigation site and (2) percent cover of the invasive species

8	5
9 or more	6

Vegetative zones consist of areas proposed for various types of wetlands (shrub swamp, forested swamp, etc.). The performance standards for density can be assessed using either total inventory or quadrat sampling methods, depending upon the size and complexity of the site.

3) a. Each mitigation site has at least 80% areal cover, excluding planned open water areas or planned bare soil areas (such as for turtle nesting), by noninvasive species (See Table 4).
b. Planned emergent areas on each mitigation site have at least 80% cover by noninvasive hydrophytes.
c. Planned scrub-shrub and forested cover types have at least 60% cover by noninvasive hydrophytes, of which at least 15% are woody species.

For the purpose of this success standard, invasive species of hydrophytes are:

Cattails -- *Typha latifolia, Typha angustifolia, Typha glauca*;
Common Reed -- *Phragmites australis*;
Purple Loosestrife -- *Lythrum salicaria*;
Reed Canary Grass -- *Phalaris arundinacea*; and
Buckthorn – *Rhamnus frangula.*

4) Common reed (*Phragmites australis*), Purple loosestrife *(Lythrum salicaria*), Russian and Autumn olive (*Elaeagnus* spp.), Buckthorn (*Rhamnus* spp.), Japanese knotweed (*Polygonum cuspidatum*), and/or Multiflora rose (*Rosa multiflora*) plants at the mitigation site(s) are being controlled.

For this standard, small patches must be eliminated during the entire monitoring period. Large patches must be aggressively treated and the treatment documented.

5) **All slopes, soils, substrates, and constructed features within and adjacent to the mitigation site(s)** are stable.

Monitoring Report Requirements

Additional items for inclusion:

Project Overview

Remedial measures will be implemented - at least two years prior to the completion of the monitoring period - to attain the success standards described below within two growing seasons after completion of construction of the mitigation site(s). Should measures be required within two years of the end of the monitoring period, the monitoring period will be extended to ensure two years of monitoring after the remedial work is completed. Measures requiring earth movement or changes in hydrology will not be implemented without written approval from the Corps.

At least one reference site adjacent to or near each mitigation site will be described and shown on a locus map.

Success Standards

1) The site has the hydrology, as demonstrated with well data collected at least weekly from March through June or other substantial evidence, to support the designed wetland type.

Is the proposed hydrology met at the site?
What percentage of the site is meeting projected hydrology levels?
Areas that are too wet or too dry should be identified along with suggested corrective measures.

2) The proposed vegetation diversity and/or density goals for woody plants from the plan are met.

Unless otherwise specified in the mitigation plans, this should be at least 500 trees and shrubs per acre, of which at least 350 per acre are trees for proposed forested cover types, that are healthy and vigorous and are at least 18" tall in 75% of each planned woody zone AND at least the following number of non-exotic species including planted and volunteer species. Volunteer species should support functions consistent with the design goals. To count a species, it should be well represented on the site (e.g., at least 50 individuals of that species per acre).

# species planted	minimum # species required (volunteer and planted)
2	2
3	3
4	3
5	4
6	4
7	5

listed under Success Standard No. 3, above, in each mitigation site.

- What fish and wildlife use the site(s) and what do they use it for (nesting, feeding, shelter, etc.)?

- By species planted, describe the general health and vigor of the surviving plants, the prognosis for their future survival, and a diagnosis of the cause(s) of morbidity or mortality.

Conclusions

- What remedial measures are recommended to achieve or maintain achievement of the five success standards and otherwise improve the extent to which the mitigation site(s) replace the functions and values lost because of project impacts?

Monitoring Report Appendices

Appendix A -- An as-built plan showing topography to 1-foot contours, any inlet/outlet structures and the location and extent of the designed plant community types (e.g., shrub swamp). Within each community type the plan shall show the species planted—but it is not necessary to illustrate the precise location of each individual plant. There should also be a soil profile description and the actual measured organic content of the topsoil. This should be included in the first monitoring report unless there are grading or soil modifications or additional plantings of different species in subsequent years.

Appendix B – A vegetative species list of volunteers in each plant community type. The volunteer species list should, at a minimum, include those that cover at least 5% of their vegetative layer.

Appendix C -- Representative photos of each mitigation site taken from the same locations for each monitoring event. Photos should be dated and clearly labelled with the direction from which the photo was taken. The photo sites must also be identified on the appropriate maps.

ITEM #0948013A – TIDAL WETLAND CREATION

Description:

The work shall consist of the construction of Tidal Wetland Mitigation Area at the sites identified on the Tidal Wetland Mitigation Plans. The work generally consists of preparing appropriate site grades as directed by the Engineer within the mitigation area.

Materials:

Planting Substrate and Topsoil: Natural or manmade planting substrate or topsoil may be used, which shall consist of soils containing ***no less than*** 75% sand by weight and an organic content no less than 10% and no more than 15%. The soil must be analyzed by USDA-approved methodology for organic matter by loss-on-ignition of oven-dried samples dried at 105 degrees centigrade. The mineral fraction must be analyzed to determine weight percentage of sand, as determined after passing a 2-millimeter (mm) sieve. Sand particles are defined to be between 0.05 and 2.0 mm in diameter. The topsoil must be free of seeds and roots of invasive species and inspected and approved by the Connecticut Department of Transportation Office of Environmental Planning (CT DOT OEP) prior to its application.

Topsoil not furnished by the Contractor shall be natural topsoil material from areas free of invasive species stripped from earth excavation areas within the project limits if it meets the criteria described above. If these soils do not meet the criteria, additional make-up material from off-site areas may be substituted or mixed with the on-site project material provided the resultant soil composition meets the applicable criteria. Clean leaf compost is the preferred soil amendment to achieve these criteria. If other soil amendments are more readily available than clean leaf compost they can be used to meet the requirement for organic content.

If soil must be supplemented with organic material, the following sources are acceptable:

a) **Natural Wetland Soil:** The top layer of natural wetland soil excavated from within the project limits or from another wetland source. The bottom of this layer shall be defined as the depth at which the soil color and texture changes, indication the beginning of the subsoil. Each source must be inspected at least 6 months prior to excavation and determined by the CT DOT OEP to be free from seeds and roots of invasive species.

b) **Compost:** Compost shall meet the requirements of **Subarticle M.13.06 – Compost.**

c) **Peat:** Peat shall meet the requirements of **Subarticle M.13.07 – 13 – Peat.** Peat material excavated from the project site may be substituted for commercially packaged peat, at the discretion of the Engineer, if the on-site peat meets all the requirements of the specification.

Construction Methods:

A wetland scientist from the CT DOT OEP will be on-site to monitor construction of the Wetland Mitigation Area to ensure compliance with the mitigation plan.

The Contractor shall submit a construction schedule and an outline of construction methodologies for the required earthwork of the mitigation site according to the general construction sequence and requirements outlined below to CT DOT OEP for approval. The Contractor must schedule wetland restoration activities to begin as soon as completion of structural work and access allows. The grading and seeding must be performed within the same construction season, with no scheduled inactive period of more than 10 workdays. The grading and seeding shall be scheduled so that seeding and planting will occur within an approved planting season. Grading shall be completed during and near times of low tide only.

During the performance of this work, a CT DOT Environmental Inspector from the CT DOT OEP will be available to visit the site to direct the construction activities involved in constructing the wetland restoration site. The Contractor shall arrange through the engineer at least 10 days prior to the commencement of these activities to ensure that the Environmental Inspector is available. The CT DOT OEP reserves the option to reconfigure the mitigation site Grading and Planting Plans to ensure mitigation site success.

(a) Identify temporary stockpile and staging locations.

(b) Verify and delineate established work limits in the field.

(c) Meet with the CT DOT OEP Environmental Inspector in the field.

(d) Remove nuisance vegetation and all invasive plant species identified in the NOTICE TO CONTRACTOR – INVASIVE PLANT SPECIES from the site and as directed by OEP staff. Invasive species removal must be done utilizing a method appropriate for that species and season.

(e) Install temporary sedimentation and erosion control measures.

(f) Identify, clear, grade, and stabilize any required haul road(s) if necessary. Construct haul roads in a manner that minimizes disturbance to existing vegetation. No additional impacts may occur to the existing tidal wetland vegetation other than already depicted on the plans as a result of access.

(g) Wood debris and other bulky debris and rubbish shall be cleared from the wetland creation area.

(h) Excavate mitigation site to a depth of at least 0.8 meters below proposed finished grade, following sequence and methods noted on the Grading Plan and as directed by an

Environmental Inspector from the CTDOT OEP. Excavation shall be to a depth to remove all roots of Phragmites as directed by OEP.

(i) Prior to placing planting substrate, obtain site-specific tidal data at the mitigation site in order to establish appropriate elevations for final grading and set reference stakes as requested by OEP staff.

1. Obtain (survey) elevation of existing Spartina vegetation and stake in field

(j) Place tested and approved Planting Substrate and Topsoil over approved subgrade in the locations and to the final grades shown on the Grading Plan, in a manner consistent with specification of the Grading Plan and as directed by an Environmental Inspector from the CTDOT OEP. Substrate shall be placed in a manner to avoid compaction of soil.

(k) Initiate and complete seeding consistent with specification of the Planting Plan.

(l) Prior to planting, obtain site-specific tidal data at the mitigation site in order to establish appropriate elevations for tidal wetland plantings.

1. Obtain (survey) High Tide Line and stake in field

(m) The CT DOT OEP shall inspect and approve the mitigation site prior to planting. During the performance of this work, a CT DOT Environmental Inspector from the CT DOT OEP will be available to visit the site to direct the planting within the wetland creation sites. The Contractor shall arrange through the engineer at least 10 days prior to the commencement of these activities to ensure that the Environmental Inspector is available.

(n) Initiate and complete planting in an approved planting season, per specification of the Planting Plan.

(o) Remove temporary sedimentation and erosion control measures. Temporary devices and structures to control erosion and sedimentation in and around the Tidal Wetland Mitigation Area shall be disassembled and properly disposed of. Sediment collected by these devices shall be removed and placed upland in a manner that prevents its erosion and transport to a waterway or wetland, in accordance with Section 1.10, including Best Management Practices.

(p) Restore stockpiling and staging site(s) and access/haul roads to the mitigation site.

(q) Clear the mitigation site of debris, rubbish, garbage, and other manmade litter.

(r) Provide as-built plans of the mitigation sites to CT DOT OEP.

Method of Measurement:

Tidal Wetland Creation will be measured for payment by the number of square meters of Tidal Wetland Mitigation Area re-graded, covered with planting substrate/topsoil, and accepted.

Basis of Payment:

The work will be paid for at the contract unit price per square meter for "Tidal Wetland Creation" within the Tidal Wetland Mitigation Areas, complete in place, including all materials, equipment, maintenance, tools, labor, and work incidental thereto.

The price shall also include: removing invasive plant species; hauling and disposing of excess topsoil; forming subgrade within the Tidal Wetland Mitigation Areas; testing, mixing, and providing planting substrate and topsoil; placing planting substrate and topsoil; restoring stockpiling and staging site(s) and haul roads; removing and disposing of debris, garbage and litter; and forming subgrade within the Wetland Mitigation Area.

The cost of installing and removing sedimentation and erosion controls, including Sedimentation Control Systems, shall be paid for under their respective contract items.

The cost of all excavation will be paid under the contract item, "Earth Excavation".

The cost of all plantings will be paid under the contract item, "Furnishing, Planting and Mulching Trees, Shrubs, Vines and Ground Cover Plants".

The cost of seeding will be paid under the contract item, "Shoreline Grass Establishment"

Pay Item	Pay Unit
Tidal Wetland Creation	S.M.

ITEM #0950202A – SHORELINE GRASS ESTABLISHMENT

Description:

The work included shall consist of providing an accepted stand of established shoreline grasses by furnishing and placing seed as shown on the mitigation plans or as directed by the Engineer within the Tidal Wetland Mitigation Area. Seeding shall be applied to all non-inundated constructed mitigation areas.

Materials:

The materials for this work shall conform to the requirements of Article 9.50.02.

Construction Methods

Construction methods shall be those established as agronomically acceptable and feasible and which are approved by the Engineer.

Shoreline Grass Mix

In order to preserve and enhance the diversity of native species, it is necessary that the source for seed mixtures for use in mitigation areas shall be located within the Northeast USA including New England, New York, Pennsylvania, New Jersey, Delaware, or Maryland. The appropriate Shoreline Grass Mix for the Coastal Shoreline Planting Zone of the Tidal Wetland Mitigation Area is detailed. Other proposed mixtures must be approved by the CT DOT OEP prior to use.

Rate shall be 50 lbs./acre (broadcast).

Scientific Name	Common Name	% of Seed Mix
Festuca rubra	Creeping Red Fescue	30
Panicum virgatum	Shelter Switchgrass	30
Andropogon gerardi	Big Bluestem	20
Sorghastrum nutans	Indiangrass	12
Panicum clandestinum	Deertounge	8

Method of Measurement:

Shoreline grass establishment will be measured for payment by the number of square meters of surface area of accepted established shoreline grasses.

Basis of Payment:

The work will be paid for at the contract unit price per square meter for "Shoreline Grass Establishment", which price shall include all materials, equipment, maintenance, tools, labor, and work incidental thereto. Partial payment of up to 60% may be made for work completed but not accepted.

Pay Item	Pay Unit
Shoreline Grass Establishment	S.M.

ITEM #0949029A – FURNISHING, PLANTING AND MULCHING TREES, SHRUBS, VINES AND GROUND COVER PLANTS

Description:

The work shall consist of furnishing and planting shrub plantings of the type and size as indicated on the planting schedule and planting plan for the Tidal Wetland Mitigation Area(s).

Materials:

The shrubs to be planted within the Tidal Wetland Mitigation Area shall be as listed in the Planting Schedule of the Mitigation Planting Plan. A member of the Connecticut Department of Transportation Office of Environmental Planning (CT DOT OEP) must approve any species substitutions from the planting plan.

Whenever possible, plants should be salvaged from wetlands and uplands cleared by the project. In some circumstances, local "scavenging" of wetlands may be permitable, but care is necessary to avoid jeopardizing established natural habitats or to unintentionally transplant invasive species. A member of the Connecticut Department of Transportation Office of Environmental Planning (CT DOT OEP) must oversee any salvaging of plants from cleared areas.

(1) Tidal Wetland Plant Sources: In order to preserve and enhance the diversity of native tidal wetland species, it is necessary that the source for plants for use in mitigation areas shall be located within the Northeast USA including New England, New York, Pennsylvania, New Jersey, Delaware, or Maryland.

(2) Approved Plant Species: Plant species shall be as specified in the Planting Schedule of the Planting Plan or as approved by the CT DOT OEP.

Construction Methods:

(1) Planting Season: All plant material is to be planted in the Tidal Wetland Mitigation Area from April 15th to June 15th (inclusive).

All shrubs within the Wetland Mitigation Area(s) must begin immediately following the final grading and seeding and must be performed and completed within the specified period, or as otherwise directed by the Engineer. Plant locations shall be as generally depicted in the planting plan for the Tidal Wetland Mitigation Area(s), or as modified by the Wetland Scientist from the CT DOT OEP.

(2) Excavation: Planting holes or pits within the Tidal Wetland Mitigation Area must be dug manually. Power equipment may only be used for limited areas as approved by the Engineer.

(3) Setting Plants: Setting Plants: All planting within the Wetland Mitigation Area(s) shall conform to the following additional requirements:

(a) – Setting of herbaceous stock in Wetland Areas: Herbaceous stock shall be planted within planting cells, or clusters, such that individual plants of the same species are grouped together within each cell, at the spacings directed by a member of the CT DOT OEP. All plants shall be set manually. The placement of the cells shall be identified in the field and approved by a member of the CT DOT OEP.

During planting, a member of the CT DOT OEP may relocate up to 50% of the planting cells, from the locations identified in the field or shown on the plans, if as-built site conditions would pose an unreasonable threat to the survival of plantings installed according to the mitigation plan. The planting cells shall be relocated to locations with suitable hydrology and soils and where appropriate structural context with other planting cells can be maintained. The term planting cells means the discrete clusters of plants shown on the approved planting plan. If plant species are not planted in discrete clusters, the planting cell is the entire mitigation site.

(b) – Setting of Shrub Plants in the Wetland Area: All shrub plants in the Tidal Wetland Mitigation Area shall be set as to be level with the microtopography of that immediate area. Shrubs will be irregularly placed within a planting cell, at a minimum spacing specified in the Planting Schedule. For each species, the number of plants shall be as indicated in the Planting Schedule.

(4) Fertilizing: Do not fertilize plantings within the Tidal Wetland Mitigation Area(s).

(5) Guying and Staking: The guying and staking requirement does not apply to plantings within the Tidal Wetland Mitigation Area; do not guy or stake shrubs in wetland mitigation areas.

(6) Mulching: Do not mulch plantings within the Tidal Wetland Mitigation Area(s).

(7) Establishment Period: The Contractor shall replace all dead shrubs within the Tidal Wetland Mitigation Area at the recommendation of the Wetlands Scientist from the CT DOT OEP within one year of planting.

(8) Control of Invasive Species: The Contractor shall control the presence of invasive species within the Tidal Wetland Mitigation Area as follows:

(a) Year 1: In June of year 1 a qualified wetland scientist shall inspect the wetland mitigation site for the presence of invasive species including, but not limited to phragmites, purple

loosetrife, autumn olive, Multiflora rose, Morrow's and Tartarian honeysuckle and reed canary grass. If such species are found, the Contractor must use mechanical methods for removal of all invasive plants from within the Tidal Wetland Mitigation Area, including all roots.

If a member of the CT DOT OEP determines that the mechanical removal methods have been unsuccessful, the Contractor shall employ a licensed herbicide applicator to treat these individual plants with glyphosphate-based herbicide or other approved equivalent to control and/or eliminate such species from the mitigation area. The herbicide Roundup™ shall not be used in or near wetlands because the surfactant in Roundup™ is believed to harm wetland invertebrates. Instead, Rodeo™ or other appropriate options shall be used if required.

Method of Measurement:

The quantity for which payment will be made is the number of shrubs counted in place, planted, and accepted, as shown on the Wetland Mitigation Planting Plan Schedule. Measurement areas for planting shall be assumed as follows: 0.75 square meters (S.M.) for shrubs.

Basis of Payment:

Payment for this work will be made at the contract unit price per square meter for "Furnishing, Planting and Mulching Trees, Shrubs, Vines and Ground Cover Plants" of pit excavation of each shrub completed and accepted in place, which price shall include all materials, equipment, tools, labor, transportation, operations, and all work incidental thereto. No compensation shall be paid for replacement shrub plants required within one year of planting and as determined by the CT DOT OEP after inspection of the first year of growth and survival.

Pay Item	Pay Unit
Furnishing, Planting and Mulching Trees, Shrubs, Vines and Ground Cover Plants	S.M.